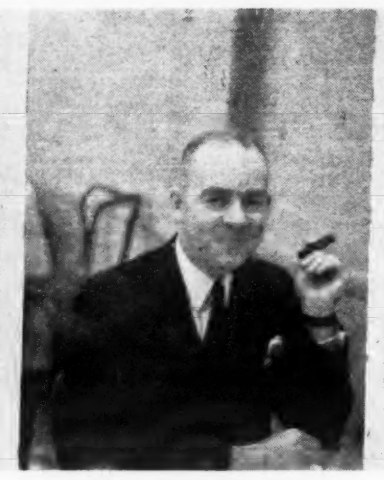
Dedication of G-E Institute Brings Executives into the Camera's Range

P. B. Zimmerman pays attention to Owen D. Young's talk.

Messrs. Chapman and Donovan crowd each other for a view of the speakers.

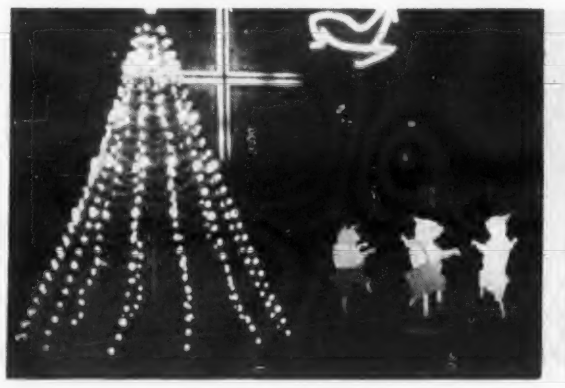


R. C. Cameron, who heads up G-E's department store division.

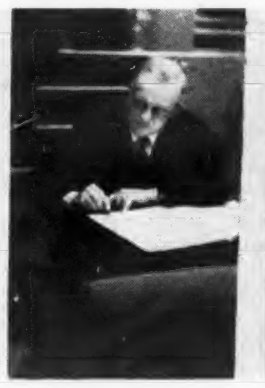
Happy Paul Dow, co-director of the G-E Institute, has a big grin for everyone present.

Harry Mealey and W. M. Timmerman smile their best.

Holiday Spirit and Decorations Make Ceremony a Gala Affair



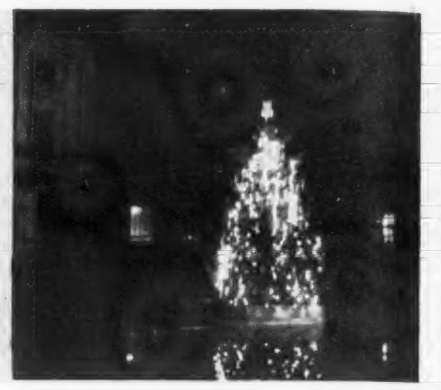
The "Three Little Pigs" done in mazda by G-E lighting engineers formed part of the decorations that graced Nela Park at the dedication.



A visitor at the G-E institute signs the guest register.

Everett Rhodes Castle (second from right), Saturday Evening Post author of humorous stories, during a lull in the festivities.

The dedication ceremonies were not so formal that table conversation lagged.



Christmas in Venice. The floating, illuminated Christmas tree was a decorative feature at the dedication.

Prominent Members of G-E's Staff Are Caught at Work and Play

Ted Quinn maps out some sales strategy for "Zim's" benefit.

A. M. Sweeney, sales manager of G-E's refrigeration department demonstrates.

Walter Daily and Lou Maxon get in some good licks at the banquet table.

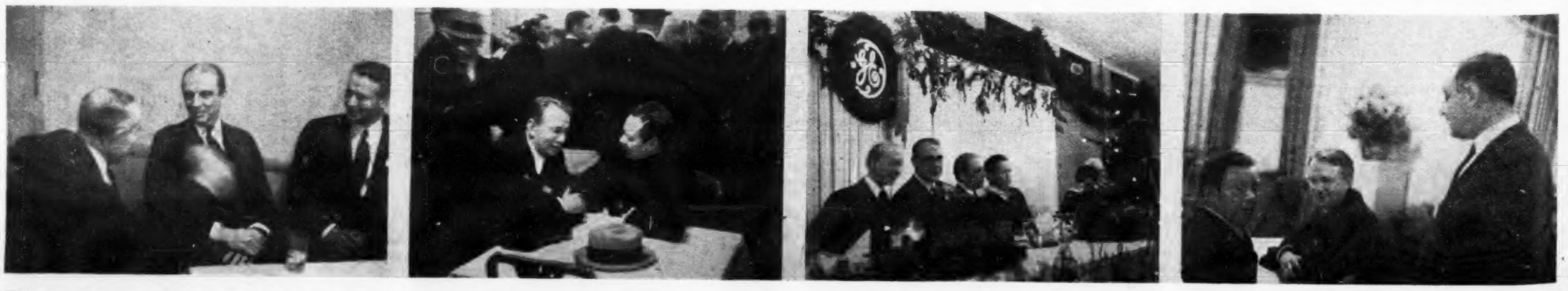
Marcella Ankrum, assistant to Edwina Nolan, burns the midnight oil.

"Eddie at the Sink." G-E's home service director cavorts in a kitchen.

Guests at the Institute Dedication Hold 'Group Discussions'

Guests at the dedication wandered about to investigate various parts of the Institute, and were caught in these animated tete-a-tetes by the editor's camera.

Young, Quinn, and Others Express the Informality of the Occasion



There was time aplenty for friendly chats during and after the dedication banquet. Here are Owen D. Young, T. K. Quinn, and others of "Speaker's Row" exchanging bon mots at the ceremony.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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CROSLEY INTRODUCES FULL-LENGTH DOOR

Owner Loyalty Is Westinghouse '34 Sales Theme

Company Devoting Main Part of Appropriation To Refrigeration

By George F. Taubeneck

MANSFIELD, Ohio—Owner satisfaction and loyalty will be the theme of 1934 Westinghouse refrigerator promotion, a national assemblage of Westinghouse supervisors (territorial representatives) learned in Mansfield last Wednesday, Thursday, and Friday.

Based on 15,000 interviews by Houser Associates, statistical data will be presented in various forms in the attempt to sell prospects by using users.

"Westinghouse is looking to refrigeration to be its bellwether in 1934," declared Ralph Leavenworth, general advertising manager of the Westinghouse Electric & Mfg. Co. "Toward that end we have devoted the main part of our advertising appropriation to refrigeration, and have developed what we consider the best refrigerator sales-stimulating campaign we have ever employed," he stated.

Thursday night a banquet was served at the Mansfield-Leland hotel in honor of Jerry O'Donnell, formerly assistant to Ray Cosgrove, who has been promoted to merchandising manager of the central division, with headquarters in Pittsburgh. Phil Danley, who previously held that position, is now assistant to R. E. Imhoff as sales manager of the merchandising division, with headquarters in Mansfield.

Ray Cosgrove, refrigeration sales

(*Concluded on Page 16, Column 1*)

3 Styles of Cabinets In 1934 Gibson Line

GREENVILLE, Mich.—A new deluxe series with paneled cabinet front and semi-concealed modernistic hardware distinguishes Gibson Electric Refrigerator Corp.'s recently introduced 1934 models from its 1933 line.

There are three distinct cabinet styles in the 1934 Gibson line. The smaller models in the "LR" series have a plain finished cabinet and are available in lacquer exteriors only. Two streamlined models are carried over from the streamlined series introduced last year, and the deluxe models, which are available in both porcelain and lacquer exterior finishes, have the paneled cabinet fronts.

The "Pres-Toe" door opening pedal is now standard on both the streamlined models, which are otherwise unchanged. The combination nameplate and temperature regulating dial which was a characteristic of the streamline models is also being used on the new deluxe series.

All models are equipped with the two-cylinder, hermetically sealed Gib-

(*Concluded on Page 15, Column 4*)

Norge Wholesale Men Will Convene Jan. 22

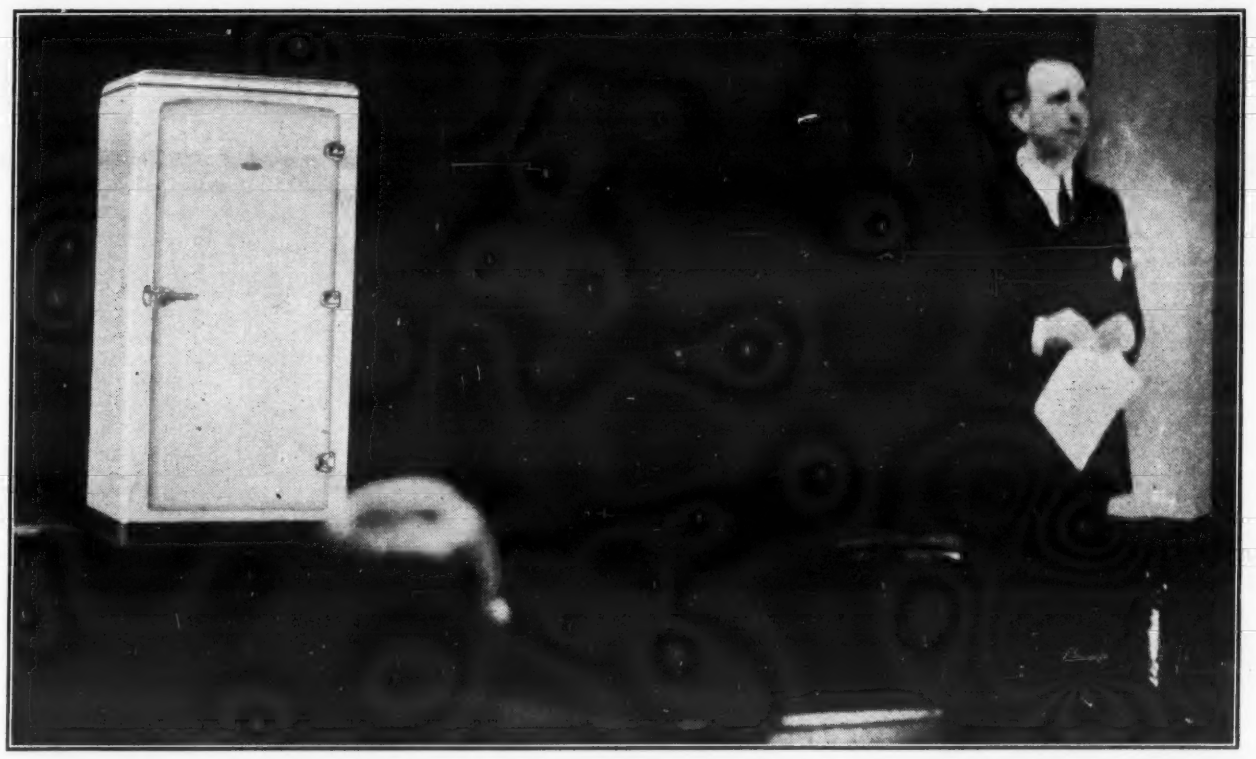
DETROIT—Wholesale salesmen from every Norge distributorship in the country will assemble in Muskegon, Mich., Jan. 22 for a three-day meeting at which they will study products and plans for 1934, according to J. A. Sterling, advertising-sales promotion manager of Norge Corp. here.

On the first day, Howard E. Blood, president, John H. Knapp, vice president in charge of sales, and other Norge officials will present the company's lines for this year. The day's program will be similar to that of the recent distributors' meeting, but will be a condensed version of it.

Second day, Jan. 23, will be devoted to a tour of Norge's Muskegon factory. And on the third, the wholesale men

(*Concluded on Page 9, Column 5*)

Powel Crosley, Jr., Presents the Tri-Shelvador



Unveiling of new Crosley model by company's president as seen from sixth row at distributor convention.

Alabama Distributor Declared Winner in G-E Sales Campaign

CLEVELAND—Concluding General Electric Co.'s "Stock Market Campaign" with 232.1 per cent of quota—29 per cent ahead of its nearest rival—the Alabama Refrigeration Co., G-E distributor in Birmingham, last week was declared winner in the competition which ran from Sept. 18 to Dec. 23.

By virtue of this distributorship's victory, Gordon Smith, its head, automatically became "chairman of the board of governors of the General Electric Stock Exchange."

Other members of the board of governors and their percentage of quota attainment are: W. M. Perry of Perry-Browne, Inc., Columbia, S. C., 203.1 per cent; George Patterson of George Patterson, Inc., St. Petersburg, Fla., 201.8 per cent; M. A. Weissenburger of Southern Appliances, Inc., New Orleans, 184.9 per cent; L. W. Driscoll of L. W. Driscoll, Inc., Charlotte, N. C., 170.5 per cent.

Glenn C. Wasson of Electric Household Appliances, Inc., Dallas, 168.2 per cent; H. H. Courtright of Valley Electrical Supply Co., Fresno, Calif., 161 per cent; L. D. James of James & Co. Inc., St. Louis, Mo., 155.9 per cent; S. E. Stewart of Electric Home Appliances, Inc., Charleston, W. Va., 153.2 per cent; W. H. Kaiser of General Electric Supply Corp., Boston, 152.8 per cent.

During the campaign's final week,

(*Concluded on Page 16, Column 5*)

Westinghouse Designs Self-Contained Cooler

EAST PITTSBURGH, Pa.—A new self-contained room cooler, with the motor, refrigeration compressor, condenser, and evaporator coil all housed in the same cabinet, has been developed by engineers of Westinghouse Electric & Mfg. Co.

The refrigerating machine includes two ¼-hp. hermetically sealed Westinghouse compressors, each with a coil of tubing around the motor to carry off the motor heat by a stream of cooling water. The refrigerant condenser consists of a coil of concentric tubing built around the compressor assembly.

Air is drawn in through a side grille by a new type of quiet propeller type fan, developed by Westinghouse, and forced through a finned type coil in which Freon refrigerant is expanded. The room cooler has ½ ton of refrigeration capacity.

With other types of air conditioners, the air-conditioning cabinet is placed in the room to be conditioned and the refrigerating unit is located in the basement or a nearby closet. Special

(*Concluded on Page 15, Column 5*)

Hearings on Industry's Code Adjourned Until Jan. 29

WASHINGTON, D. C.—Hearings on the code of fair competition for the electric refrigeration industry as proposed by the Refrigeration Division of the National Electrical Manufacturers Association were adjourned until Jan. 29 by Deputy Administrator H. L. King at the conclusion of hearings held last Thursday and Friday.

Due to the amount of time devoted to discussions of proposed changes in the basic Nema code governing the electrical manufacturing industry, to which the refrigeration code is supplemental, very little time was spent on the refrigeration industry's proposals of fair practice.

The code was filed without a reading by Howard E. Blood, Norge Corp., chairman of the Refrigeration Division's code committee.

Sings for Sparton

Frances Langford, "the little girl with the big voice," now broadcasts every Sunday over a national hookup for Sparton. She is a protege of Rudy Vallee.

Westinghouse Units To Condition Air in Chicago Skyscraper

CHICAGO—Contract for complete year 'round air conditioning of *The Chicago Tribune's* building on North Michigan Ave. here has just been awarded to Kroeschell Engineering Co., local distributor of Westinghouse air-conditioning equipment. The announcement declares that it will be "the first skyscraper in Chicago to be completely air conditioned."

The installation will include both unit and central air conditioning, some 390 Westinghouse unit cabinets being planned for individual offices, and five central duct systems for larger rooms. Both will be cooled by a 600-ton Westinghouse steam ejector refrigeration plant in the basement, from which cold water will be circulated through a system of insulated pipes.

The unit conditioners will be placed under window sills, replacing cast-iron radiators which heat the building at the present time.

Contributing factors to the selection of this plan were the facts that practically no rentable floor area will be lost by the installation, and that a minimum of alterations in the building will be required. The installation is to be completed before summer.

Skytop, Pa. Is Selected For A.S.R.E. Meeting

NEW YORK CITY—Skytop, Pa., has been chosen for this year's spring meeting of the American Society of Refrigerating Engineers, according to A.S.R.E. headquarters. This is a small summer resort town, with adequate automobile routes and railroad facilities.

The meeting will be held in June, with dates overlapping those of American Society of Heating and Ventilating Engineers' convention with which a joint session is being planned. Members of the Philadelphia section A.S.R.E. are to act as hosts, with C. R. Logan as chairman in charge of entertainment.

Grigsby-Grunow Adds 600 Workers to Force

CHICAGO—At the close of last week, more than 600 employes had been added to the payrolls of Grigsby-Grunow Co. here, according to LeRoi J. Williams, general manager.

With this added force, more than 2,000 employes are now engaged in the manufacture of Majestic products, and that number will be increased further as production on the company's 1934 refrigeration line is stepped up.

New Shelvador Line Improved In Appearance

Shelvabasket, Shelvatray Features Are Added, Unit Unchanged

By George F. Taubeneck

CINCINNATI, Ohio—Powel Crosley, Jr., has tidied up his Shelvador. Chief objection last year to the Crosley Shelvador refrigerator—of which some 50,000 were sold in 1933, which is three times as many Crosleys as were sold before the advent of the Shelvador—was its ungainliness. New 1934 models, as shown last week to more than 100 Crosley distributors, are graceful and distinctively styled.

Full-length doors appear on the deluxe line, which is also distinguished by having a solid black base (no legs). Rounded doors, stagger-cut legs, and a radio-like grille for ventilation distinguish the standard line.

The deluxe line is called the Tri-Shelvador, because in addition to the Shelvador (shelves within the door feature), the interior of the full-length door incorporates a Shelvatray (demountable shelf on which food may be placed after being removed from the refrigerator), and a Shelvabasket (mounted basket for vegetables which swings with the door into the capacious Storabin (storage compartment) in the bottom of the refrigerator.

Complete specifications are published on page 8 of this issue.

Rounded hardware makes possible the neatness of the new Crosley refrigerators by permitting the exterior of the doors to bow outward to accommodate the Shelvador feature, instead

(*Continued on Page 8, Column 3*)

Cooling Air Provided by New 'Ventilated Front'

By John T. Schaefer

CINCINNATI—To provide an entrance for outside air into the compressor compartment of the new Crosley electric refrigerators, a "ventilated front" has been provided on all models.

This feature is simply a grille in the front of the cabinet through which the condenser-cooling fan draws air and forces it across the condensing unit. It will be particularly helpful to operation of refrigerators installed in apartment houses or alcoves where air circulation is restricted, engineers of Crosley Radio Corp. believe.

In the three Crosley models with the full length door (described in the above report), the ventilated front is covered, but air is drawn in through vertical openings at each side of the door.

The refrigeration system is basically unchanged from last year's design, being of the conventional "open" type, furnished as a top-mounted packaged unit which a service man can remove by lifting it out of the top of the cabinet. Compressor, motor, condenser, and auxiliaries are mounted on a steel base which supports also the evaporator below.

To attain volume production on compressors, Powel Crosley, president of the firm, explains, just one size is manufactured. For the largest refrigerator the compressor is provided with a 1/5-hp. motor, instead of the ⅛-hp. size used on the smaller models.

For expansion of sulphur dioxide refrigerant into the cooling unit, a

(*Concluded on Page 12, Column 1*)

Potter Names Bommer Chief Engineer

BUFFALO—Ferdinand J. Bommer, Jr., has been appointed chief engineer of Potter Refrigerator Corp. here, according to T. Irving Potter, president.

For 14 years Mr. Bommer was associated with the Jewett Refrigerator Co., and for six years was chief engineer of that organization.

EXECUTIVES FORECAST NEW SALES RECORD THIS YEAR

(Editor's Note—Opinions of industry executives and suppliers on trends the electric refrigeration industry may take in 1934 were asked in the "Executive Questionnaire" published in columns three and four of this page. Answers start below and will also be found on pages 4, 6, and 7.)

Johnston Views NRA as Constructive Control

Universal Cooler Corp.
Green and Melville Sts., Detroit
Jan. 2, 1934.

Editor:

It is the writer's opinion that due to the returning confidence on the part of the manufacturers and the buying public sales for 1934 will exceed those of any preceding year in the history of the industry.

There is a very definite indication of an upward trend in prices.

While National Recovery Codes may be annoying and embarrassing at times, they have and are supplying many constructive elements of control in the industry which were sadly needed.

With the many new applications of mechanical refrigeration which are continually developing, it goes without saying that the industry must expand. Air conditioning and cooling will supply a great deal of this expansion although it is a field which will require many years of careful study and much hard work to fully develop.

Let me extend to the staff of the ELECTRIC REFRIGERATION NEWS my very best wishes for the New Year and repeat my previous statements that I consider this publication a splendid medium for the industry.

G. M. JOHNSTON,
President.

Zimmerman Places Stress On Utility and Styling

General Electric Co.
Electric Refrigeration Dept.
Nela Park, Cleveland
Dec. 28, 1933.

Editor:

An electrical refrigerator is now accepted as a most necessary major appliance in the American home. Those homes that do not now enjoy this service will make it one of their early purchases when their income will justify the commitment. We may, therefore, expect next year about the same number of refrigerator sales as were made in 1933 and a somewhat higher gross volume business.

We believe that utility and styling will be the important features in refrigeration activity for next year. Prices will be somewhat higher due to increased costs.

There should be a beneficial effect accrue to the industry because of the NRA codes. It is our hope that the codes will carry a strong influence for better ethics and standards of selling on the part of retail outlets, so that these outlets who have performed a most valuable function may make a profit in 1934.

Commercial refrigeration should show a real improvement if local merchants can be given banking assistance.

P. B. ZIMMERMAN,
Manager, refrigeration department.

Mason Foresees Better Commercial Business

Kelvinator Corp.
Detroit
Jan. 5, 1934.

Editor:

Unless new conditions, absolutely unforeseen at this time, should arise, it seems to me that 1934 holds every promise of an even greater electric refrigeration volume than was enjoyed in 1933.

Our heavy delivery season was both delayed and handicapped last year by the banking situation and widespread anxiety as to the future. With these handicaps removed, with retail business in other lines showing a gratifying increase, and with the greatly bettered state of the public mind, the electric refrigeration industry, organized to take advantage of such a set of conditions, should reap a substantial benefit in 1934.

I am of the opinion that there will be two very important selling points in the 1934 activities of our industry. One will be the selling of the prospect on the idea that he or she cannot afford to do without an electric refrigerator. The other will be the selling of the features possessed by the electric refrigerator in question in terms of the prospect's convenience.

There is nothing in the picture today to indicate the possibility of lowered manufacturing costs. On the contrary, all price trends seem to be upward. If it is to cost more to manufacture the product, and if the retail salesman and the dealer organization are to receive proper compensation for their efforts, it seems reasonable to believe that retail prices must advance.

You ask about the effect of the NRA codes upon the refrigeration industry. Let me say that in the case of Kelvinator Corp., the NRA code has had but little effect upon our business since practically every provision of the code had already been a part of our regular practice.

Another of your questions asked for an opinion as to whether the "styling" of electric refrigerators will become more important in the coming years. That would seem to depend upon the interpretation given to the word "styling." If it is taken to mean a constant striving for greater beauty of design, the answer would be "Yes."

If, on the other hand, the word is to be interpreted to mean a redesigning in terms of fantastic modernism, the answer would be in the negative. The public has been appreciative of clean design along conservative lines, but, so far, has shown but little interest in revolutionary ideas.

The year 1934 will undoubtedly bring a wider interest in air-conditioning equipment. Already many of the central stations of the country, which did such valiant service in the pioneering of electric refrigeration and other electrical appliances, have evidenced their intention to do their part in the opening of this new market. Their efforts are bound to be productive of results.

The new year should also bring a very substantial increase in commercial business. During the depression period, the engineering departments have not been idle. Remarkable advances have been made in the efficiency of commercial refrigeration equipment. All that is needed now to bring back this market is a bolstering of the business of the prospective purchasers of such equipment.

Judging from the available reports on retail business in all parts of the country, 1934 should justify the placing of a greatly increased amount of attention and effort against the commercial market.

G. W. MASON,
President.

More Employment Means More Buyers—Blood

Norge Corp.
670 E. Woodbridge St., Detroit
Dec. 22, 1933.

Editor:

I am glad to express my opinion that 1934 will beat, by a considerable margin, the year 1933. General improvement in business, largely increased employment among people of a type who can properly buy on the instalment basis, and the wide-spread desire for electric refrigeration, definitely point to 1934 being a wonderful year for every dealer who will get out and work and who will put consistent and intelligent efforts behind a good product.

Commercial refrigeration should continue to improve. There is a widespread need for commercial refrigeration and its sale has been deterred by poor business conditions. Increased volume of business in retail establishments which need commercial refrigeration should put many thousands of merchants in a position to obtain this equipment in 1934. Here again there is a golden opportunity for the dealer who will work hard with a good product.

Prices must necessarily be higher due to increased costs brought about partly by higher wage schedules under NRA and partly by increased demand for materials.

As the demand for refrigeration broadens it will be possible for many different types of stores and dealer outlets to make money in this business.

Air conditioning will, I believe, gradually assume a more important place in the refrigeration industry. Now is the time for dealers who are properly organized to handle this kind of work, to get into the business and learn it gradually, so that when general prosperity builds up to a point where air-conditioning equipment can be sold in volume, such dealers will have learned the business and will be in a position to cash in on their experience.

Instalment selling has proven to be very sound in this industry. I will hope that dealers, distributors, and manufacturers, will keep instalment selling on a sound basis and not go too far in the line of small down payments, excessively long time, trial installations, and other practices which, if allowed to go too far, can't help but result in losses.

You ask in what respects has ELECTRIC REFRIGERATION NEWS fulfilled its mission of service to the electric refrigeration industry. Well George, this is written just before Christmas and I am glad to take the occasion to commend the earnest efforts made by you and the rest of the staff to give the industry a useful, constructive paper. I wish you A Very Merry Christmas, and sincerely hope that The New Year will be a Happy and Prosperous one for the NEWS.

HOWARD E. BLOOD,
President.

Executive Questionnaire

(Editor's Note—The following questions were asked chief executives of leading manufacturers of refrigeration equipment and supplies. Replies to the questions appear on this and following pages.)

1. Do you think electric refrigeration sales in 1934 will be greater than those in the all-time-record year of 1933? On what do you predicate your belief?

2. What will be the most important selling point in the merchandising of household electric refrigerators in 1934?

3. Will the price trend continue upward?

4. What effect will the maintenance of NRA codes have upon the refrigeration industry?

5. Do you think styling of electric refrigerators will become more important in coming years?

6. What will be the relative importance of the following retail distribution channels in 1934: factory branch operations, distributor-controlled retail stores, independent specialty appliance dealers, department stores, furniture stores, public utilities, small retail merchants of various classifications?

7. What direction will instalment selling take? Smaller down payments and longer terms, or vice versa? What is your opinion of coin-meter plans? Free trials? Rentals?

8. Will the sale of room coolers and other types of air-conditioning equipment account for a larger portion of the industry's sales in 1934? Is equipment now available practical and marketable? How soon do you anticipate the full development of this market?

9. Do you expect an improvement in the market for commercial refrigeration equipment? What are the future possibilities of this market in comparison with the household market?

10. In what respects has ELECTRIC REFRIGERATION NEWS fulfilled its mission of service to the electric refrigeration industry in 1933? How can that service be improved in 1934?

Bright Prospects for 1934 Seen by Powel Crosley

The Crosley Radio Corp.
Cincinnati
Dec. 28, 1933.

Editor:

The prospects for the electric refrigeration business in 1934 appear to be very bright. If business conditions continue to improve more and more people will be able to buy. It would, therefore, seem at the moment entirely probable that 1934 will establish a new record.

It is to be hoped that it will be unnecessary to increase prices to an extent that they will offset improved buying power of the American people. Without doubt the price trend will be up from 1933. It is hoped that prices established at the beginning of the season can be maintained throughout the year. This will, of course, be controlled to a large extent by what happens to our currency. If the value of the dollar greatly depreciates, increasing the costs of raw materials, list prices must naturally follow the trend and go up. Naturally the increase in the number of the consumer's dollars will hardly be able to follow fast enough to permit increased volume of sales if prices sky-rocket too rapidly.

We feel strongly that the effect of the maintenance of the NRA codes will be helpful to the refrigeration industry providing labor maintains a reasonable view and makes no prohibitive demands.

Styling of refrigerators will, indeed, play an important part in their sale. Utility features, such as the Crosley Shelvador, will be an important factor.

I can not speak for the relative importance of different methods of retail distribution. Our sales will continue largely through independent distributors selling to independent authorized dealers.

It is hoped that through the NRA code instalment selling will tend toward larger down payments and shorter terms. Coin meter plans are helpful where reasonable down payment is made. Free trials should not be objectionable if made short and handled legitimately.

Air conditioning, room coolers, and the like should enjoy increasing volume. It would appear, however, that it will probably take several years before such will generally be brought within the reach of a great number of people.

It is hoped that ELECTRIC REFRIGERATION NEWS will continue its helpful function.

POWEL CROSLEY, JR.,
President.

Performance & Eye Appeal Big Factors to Ditzell

Grigsby-Grunow Co., Inc.
5801 Dickens Ave., Chicago
Dec. 21, 1933.

Editor:

We are very glad to reply the following to your letter:

(1) We are confident that electrical refrigeration sales in 1934 will be substantially greater than the all-time record of 1933.

We predicate the above forecast on the increased business in the latter part of 1933 over any similar period during the past five years. We are also of the opinion that with the improved general economic conditions the buying public is turning more and more to the necessities of modern housekeeping and, consequently, their interest in purchasing refrigerators.

We are laying our plans on the basis of a very substantial increase. We will have a very large advertising appropriation as compared with any previous year. The production schedules which we are releasing call for a substantial increase each month, beginning with March. We are therefore evidencing our faith in our forecast.

(2) We believe the most important selling point in electric refrigeration for 1934 will be performance first and eye value second.

(3) We are convinced, because of NRA and other conditions, that the price trend will continue upward.

(4) Number three actually answers this question and we can further state that the NRA codes have a definite bearing on increased prices.

(5) As stated in the foregoing, we believe that the styling of refrigerators is an important factor in merchandising.

(6) I prefer not to answer this paragraph.

(7) Instalment selling will unquestionably increase because of higher prices. Larger down payments, however, will be the trend.

(8) We cannot answer this, inasmuch as the items mentioned are not manufactured by this company.

(9) We cannot answer this, as the items mentioned are not manufactured by this company.

(10) I consider that ELECTRIC REFRIGERATION NEWS has fulfilled its mission of service to the electric refrigeration industry admirably and that a continuation of their present activities will be an important factor in the 1934 season.

JOHN F. DITZELL,
General sales manager.

Servel President Predicts Larger Down Payments

Servel, Inc.
51 East 42nd St., New York City
Dec. 21, 1933.

Editor:

Unquestionably the year 1934 should produce a greater volume of sales both for the domestic as well as the commercial lines as compared to the year 1933. This statement of course is made contingent on the gradual improvement of credits and the willingness of people to spend money in purchasing.

The domestic field will probably receive a great deal of its business from the numerous housing projects that are in contemplation, while the commercial field will probably receive a considerable impetus through the sale of air-conditioning equipment.

With the adoption of sound business ethics produced nationally by the codes, and locally by the establishment of well policed refrigeration associations, there should be a general tendency toward securing larger first down payments and shorter terms for financing.

H. H. SPRINGFORD,
President.

Air Conditioning Will Help Commercial—Sellman

Servel Sales, Inc.
51 East 42nd St., New York City
Dec. 26, 1933.

Editor:

The year 1934 should show an increase over 1933 as regards sale of both domestic and commercial refrigeration equipment. With the general betterment of employment and the easing of credit more sales must inevitably result.

Air conditioning should prove a boon to the commercial dealers, giving them a virginal field in which to work. There are sufficient prospects that will need air conditioning in the office and business establishments so that the year 1934 will probably show but little progress in home conditioning.

The establishment of trade associations locally in larger cities and the following out of the Trade Practice Codes should have an effect of breaking up unsound business practices which have been prevalent in the industry. No down payments, excessive terms, meter plans, free trials, and ridiculous rental schemes all tend to increase cost of operations and must be curtailed before the industry reaches firm ground again.

Your paper has served well as a trade paper and has promptly carried its messages to the trade.

F. E. SELLMAN,
Vice president.

Grunow Says Refrigeration Becoming a Necessity

General Household Utilities Co.
Chicago
Dec. 26, 1933.

Editor:

There is scarcely any doubt that refrigerator sales will be bigger in 1934 than in 1933.

We are about agreed that the trend of business is upward which would cause a natural gain in sales, but in addition all the surveys which we have made and all the other information we have secured from our sales and dealer organization, leads us to believe that electric refrigerators are, each year, becoming more of a necessity in the home.

Insofar as sales points are concerned we cannot help but feel that our Carrene refrigerant has already come to mean something very important in the householder's mind. It is fundamentally sound, offers complete safety and the simplicity of mechanical operation and service that always appeals.

Prices are bound to be upward due to increased prices of raw materials and maintenance of codes.

We believe styling to be important in electrical refrigeration, the same as in automobiles and similar merchandise. We do feel, however, that the kitchen is not a place to show off in fancy pieces and that simplicity of style, combined with convenience and efficiency are all that are necessary.

All classes of merchants are beginning to handle electrical refrigeration and it is difficult to state which outlet is most important. There are many independent refrigeration and electrical appliance stores going into business, due to increased demand for home appliances and we feel that these will become of more and more importance.

We never have favored the coin-meter proposition. Frankly, we feel that if the desire is there that selling terms do not have to be so long and drawn out. Summarizing the whole matter it is our sincere opinion that the electrical refrigeration business will see one of its finest years in 1934.

In closing, we wish to congratulate the ELECTRIC REFRIGERATION NEWS for its continued service to the industry. Each issue of your paper seems to be as good as the one before and even the casual reader of trade papers can appreciate that no effort is spared to reflect the happenings of the entire industry in a very impartial and entirely unprejudiced manner.

WM. C. GRUNOW,
President.

Stabilizing Effect of NRA Pleases Potter

Potter Refrigerator Corp.
220 Delaware Ave., Buffalo
Jan. 6, 1934.

Editor:

Your questionnaire of Dec. 19 remained unanswered due to the pressure necessary at this time for the preparation of our 1934 season. I am asking you to excuse me from answering each one of the numbered questions in detail, because to give you a sound answer and not merely a few words based on the surface, would entail more time than I have available.

In general, I believe the signs are too well marked for anyone to question the fact that next year will be a better year than 1933, so far as the manufacturers are concerned.

It has been with the keenest pleasure that I have watched the shift of the industry toward soundness. For several years past I have been somewhat vociferous in my urgings for greater soundness in the executive thinking governing the factory policies throughout the industry, and it is now evident to me that many others in the industry have come to a like manner of thinking. The celerity with which the chief executives of our large manufacturers interested in refrigeration have accepted and put into practice the NRA code is a clear indication of their recognition of the need for a genuinely stabilizing influence within

(Continued on Page 4, Column 1)

UNUSUAL

FRANCHISE COMPARISON CHART

points way to greater

REFRIGERATION PROFITS

DO YOU KNOW

. . . that a Westinghouse electric refrigerator was on exhibition at the Chicago World's Fair in 1893?

●

. . . that most Westinghouse dealers find it unnecessary to carry any stock of service parts whatsoever?

●

. . . that during the 12 years preceding the announcement of the Westinghouse Hermetically-sealed, Dual automatic Refrigerator, Westinghouse engineers tested and discarded most of the refrigeration principles in use by major competitors today?

●

Send for the Franchise Comparison Chart . . . compare facts like these in selecting your 1934 refrigerator line . . . why not be sure?

WESTINGHOUSE ELECTRIC

Mail Coupon for Your Copy NOW!

● If you are interested in *facts* as opposed to *unsupported claims* . . . in *profits* instead of *promises* . . . if you really want to make your 1934 selling effort on electric refrigerators produce dividends in *good-will* as well as *cash* . . . you will welcome the Franchise Comparison Chart. A few minutes of study, in the privacy of your own office, will convince you that this method of comparison is worth more than all the hours you have previously spent in discussions and decisions on this vital question.

The success of the Westinghouse Dual-automatic Refrigerator is founded upon a rock — and the name of that rock is "User-Satisfaction." Because Westinghouse experimenting is done *in advance* and not at the expense of the public, service calls are few and far between. Because owners are enthusiastic about the greater dependability, economy and convenience of this *time-tested* refrigerator, word-of-mouth recommendation keeps pace with Westinghouse advertising and promotion programs. And because facts, features and familiarity create *acceptance* for the Westinghouse Refrigerator, retailers secure greater volume at more profit with less selling cost.

You will find in the "Franchise Comparison Chart" an unusual opportunity to check the advantages of Westinghouse against all others — point by point — dollar for dollar. No method could possibly be devised that is more fair . . . more *thorough*. Why not send for your copy now . . . on the coupon below or your own letterhead? You have everything to gain and nothing to lose by taking this action NOW.

Westinghouse

The outstanding Refrigerator Franchise Opportunity of 1934

Westinghouse Electric & Mfg. Co.,
Refrigeration Division, ER. N 1-10 Mansfield, O.

If the Westinghouse Franchise can make me some extra money in 1934, I want to know more about it. Send me the "Franchise Comparison Chart."

Name.....

Address.....

City.....State.....

OPINIONS

(Continued from Page 2, Column 5)

the industry. The courage with which they have brought 1934 prices to a more sensible level is a further indication that they are beginning to look toward essential soundness rather than the mere grasping for volume. They are indeed to be congratulated.

I believe the most important unsolved problem now facing the industry is that of the dealers, and I expect to see some rather radical changes occur in this direction during the forthcoming year. From the standpoint of some manufacturers, the growing influence of the department store in refrigerator sales is welcomed; but this shift, which now amounts to a considerable proportion of the total sales of the industry, is a serious threat to the future of the individual refrigerator dealer. The root source of this condition lies with the manufacturers themselves.

Another problem the dealers are facing must be laid at the door of the distributors. This is the over-expansion of dealer outlets—in other words, "spreading the butter of profits too thin." This has caused competitive practices among the dealers which have been injurious to their own interests. I do not believe the industry as a whole can consider itself thoroughly sound until this dealer problem has been solved.

In conclusion, I cannot refrain from telling you that among the many trade papers and periodicals which reach my desk, your paper ranks exceedingly high in my estimation. While in your efforts to provide all the news of the trade, you may occasionally step on someone's toes, I sincerely trust that 1934 will see no diminution of your editorial courage, even though one of my own pet corns might be hurt in the process.

Wishing you every success for the new year.

T. IRVING POTTER,
President.

Price Increases Must Be Gradual, Schroeder Says

Sunbeam Electric Mfg. Co.
Evansville, Ind.
Jan. 5, 1934.

Editor:

We believe that 1934 will be an outstanding refrigerator year. This opinion is based on a forecast that business in general will be much better in 1934 than it was in 1933, and the public is becoming more refrigerator minded each year. Even though there is some increase in price, 1934 values will be way ahead of anything that has been offered heretofore.

The most important selling point for 1934 will be dependable refrigeration, combined with a cabinet of pleasing design and including all practical gadgets.

There will no doubt be an upward trend in price due to the general stabilization of the business and to some increases in labor and material. We think, however, that any sharp increase would tend to deter sales and seriously affect the business.

The NRA codes will have some wholesome effect on the refrigeration industry in that many of the sharp practices of the past will be supplanted by ethical rules of business.

Styling in electric refrigerators will probably be no more important this year than it was last. It is, however, quite clear that no refrigerator can expect to become very popular without some form of at least moderate styling.

Department stores will become an increasing factor in the distribution of electric refrigerators during 1934, but it is quite likely that the additional business done by department stores will not detract from the other types of distribution, such as factory branch operations, distributor-controlled retail stores, independent specialty appliances dealers, etc.—this because of the general increase in refrigerator sales as compared to previous years.

The stabilization of business generally and increased buying of the public due to restored confidence, should indicate a big year ahead for household refrigerator manufacturers.

J. HENRY SCHROEDER,
Vice president.

Kuebler Sees Need for Higher Prices

Uniflow Mfg. Co.
Erie, Pa.
Dec. 21, 1933.

Editor:

I am optimistic for the refrigeration business for 1934. The industry did a remarkable job in 1933 in selling so many refrigerators. However, I do not believe that the industry, as a whole, can be very exuberant over their net returns.

With an average price of $82 for a domestic refrigerator, it was not generally possible to make reasonable profits, if any profit at all, and even in such instances where a profit was realized, I believe it was so dangerously close to the line that the slightest adversity could easily throw it over on the other side.

No doubt, there will be throughout 1934 higher prices obtained. However, whether it will be more than the increased cost in order to have satisfactory operations is yet a question, yet the trend seems to be in that direction.

I am answering more specifically your questions as follows.

(1) I believe that 1934 sales will exceed 1933 because of general conditions being better and there being more purchasing power in the country.

(2) Convincing those with some of the extra dollars to spend, either newly acquired or released, that a refrigerator comes first in the family capital purchases, or at least among those at the top of the list.

(3) The price trend will more than likely be up rather than down.

(4) Prevent selling below cost.

(5) Styling is important. One need only to look at the refrigerator today as compared to three years ago.

(6) Relative importance of retail distribution channels will vary with different companies as to how they are set up to merchandise. It stands to reason that the channel that clicks best will be pushed the hardest, and others proportionately in their importance.

(7) I believe that larger down payments and shorter terms will likely be the rule. There is nothing particularly wrong with coin meter plans, except those without down payments. It requires a real credit man to determine the difference between bona fide buyers and leeches when no down payment is required. Even then, he may err too many times to make for sound merchandising.

(8) Without doubt, room coolers, particularly air-conditioning equipment will increase in volume on account of competition between merchants for clientele.

(9) There will, I believe, be an increasing market for commercial refrigeration. With better business for merchants and with more money to spend for capital equipment and the keen competition among them, should increase the sale of commercial refrigerators.

(10) ELECTRIC REFRIGERATION NEWS has kept the news fresh. Its editorial columns are well written and to the point. As a suggestion, an analysis of manufacturer mortality might be investigated and point out the pitfalls. Constructive suggestions no doubt would be welcomed by all.

C. A. KUEBLER,
President.

Robertson Feels Confident For Electrical Industry

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.
Dec. 30, 1933.

Editor:

The United States government is spending $3,300,000,000 on public works. In 1932 the American people, at the bottom of the depression, spent approximately four hundred billion dollars in the buying of goods and services. These figures are startling.

Even taking into account the various processes of turnover taken by our public works dollars as they multiply themselves, appearing and reappearing in payrolls in the purchase of materials, in consumer purchases, in retail purchases, in wholesaler purchases, etc., still this public works program of the United States government amounts to only a small fraction of what Mr. Public Citizen spent in one year of depression.

If we study these figures for a moment we see how much more important individual and corporate spending is than governmental spending.

A 10 per cent increase in what the consumer, corporate, and individual, spends would amount to forty billions of dollars, or more than 10 times the amount the government is spending on public works.

A comparison of this nature shows definitely that the normal exchange of goods and services by persons and corporations is the base upon which business and business recovery must rest. Government cannot by spending or by law create good business. It can feed us and clothe us, perhaps, for a time but it cannot legislate prosperity.

Practically all spending is for future needs. We buy clothes to wear tomorrow. If we knew we were going to die tomorrow we would not buy the clothes, or at least we would buy only one suit. We build houses to live in tomorrow. We build ships to sail in tomorrow.

The buying and selling of goods and services is stimulated or retarded by persons and corporations directly as they have confidence in the future. Unless tomorrow has a pleasing and definite outline we put off buying until we see its outline more clearly.

Now that NRA, AAA, CWA, etc., are swinging into action, the future is beginning to take a more reassuring form than it had a few months ago. In other words, we are getting used to the present, so that our tomorrow begins to take on the form of something we understand and for which we can plan.

As this concept becomes more definite in our minds, and we gain confidence in this tomorrow, our buying of goods and services will increase, which means the end of the depression and better times for everyone.

As far as the electrical industry is concerned, it faces the new order confidently. Its resources have been conserved, its technical progress has been uninterrupted, research has discovered many new uses for electricity, and new devices have been developed for its utilization.

As the heavy machinery market sagged, more attention was given to the development and distribution of devices for the home.

Business resulting from this stimulation of the household market has been of great aid in keeping the electrical industry intact and there is a fair assumption that it will continue.

When capital goods business finally yields to the many forces now being exerted for its improvement, the electrical industry cannot fail to benefit and again resume its rightful place as one of our most essential and most prosperous industries.

A. W. ROBERTSON,
Chairman of the Board.

John Knapp Cites Survey To Back His Optimism

Norge Corp.
670 East Woodbridge St., Detroit
Jan. 6, 1934.

Editor:

1. I believe unit electric refrigeration sales in 1934 will exceed this year's high record total by 35 per cent to 50 per cent. This conclusion is based upon a survey of the electric refrigeration market which the Norge Corp. undertook in October, 1933, and which was perhaps the most comprehensive of its kind ever made.

Nearly 25,000 consumers and over 1,500 dealers in 339 cities of 47 states were involved in this study. One of the questions asked was, "If you do not now own a refrigerator, do you intend to buy one in 1934?" Of 12,708 non-owners personally interviewed, 32.2 per cent declared their intent to buy in 1934.

Since there is an unsold expansion market for domestic refrigeration units of 5,040,000 units, this intent of 32.2 justifies a prediction that unit volume in 1934 will be 1,622,880 units which, compared to the record of 1,110,000 this year, will represent an increase of about 50 per cent.

Allowing for such retarding influences as may arise, we expect that the electric refrigeration industry in 1934 will show at least a 35 per cent increase over this year.

2. Again resorting to the findings of this unusual Norge study, we asked 12,718 non-owning families in all parts of the country what factors would most influence their buying decision in 1934. Of 15,499 specific mentions, we were able to isolate the seven most important reasons.

This study was broad enough to be generally reliable and it is recent enough to gauge the interest of the 1934 prospect. Therefore, these surveyed reasons become an excellent pattern upon which to judge the important selling points in the merchandising of household electric refrigeration in 1934.

The following table, based upon the 15,499 specific mentions, shows the result of this survey:

Factor	Percentage Ranking
Economy of operation	31.5
Convenience features	16.2
Mechanism	15.4
Company stability	10.0
Beauty	8.5
Dealer responsibility	5.0
Price	5.0
All other reasons mentioned	7.1

The average number of factors mentioned per prospect was 1.1, signifying that if the salesman in 1934 can find the one important consideration in each prospect's mind early in his solicitation, he stands an excellent chance to close the sale by sticking to one dominant idea thereafter.

In nearly 50 per cent of all cases, the single dominant factor will be either economy of operation or convenience features.

There is very little reason for a salesman to clutter up his mind or becloud his argument with a complicated number of selling arguments in 1934. There is certainly no excuse for him to become price-conscious in his solicitation. It is tremendously interesting to know that, as revealed in this survey, price is relatively an insignificant factor.

It is likewise interesting to observe that all other than the seven specific factors mentioned have only a 7.1 per cent importance rating. Thus, by focusing entire attention on the seven, a salesman can build a simple, powerful, persuasive impression with the sure knowledge that he has hit the interest of nine out of each 10 prospects.

3. It is self-evident that the price trend will be upward as it must be in all lines of general merchandise and is certainly necessitated in the electric refrigeration industry in that prices were abnormally depressed in the attempt to stimulate greater buying in the latter part of 1932 and the forepart of this year.

You have already noted in your column that while unit sales doubled in September, 1932, price sales increased only 72.4 per cent and that the industry sold 37.45 per cent more units in September, 1933, to produce 8.06 per cent less gross revenue than was the case in September, 1931.

The spreading of labor, increased wages, greater selling resistance and a number of other factors are adding to the productive and merchandising burden. It is necessary that prices be increased to compensate for these and to assure reasonable profits.

4. The principal effect, as I see it, will be the transfer of selling emphasis—from price to use-value. The success of any individual manufacturer in 1934 rests in the hands of its retail selling organization.

A new efficiency and real selling effort is required of them under NRA. This calls for a tremendous amount of sales retraining and stimulation as well as a degree of intensive effort along genuine selling lines that has not been so necessary heretofore.

5. Seldom, if ever, has any new industry become "appearance-conscious" until after manufacturing efficiency has been achieved. The stove industry continued an adaptation of the form of the old wood and coal range for years until functional efficiency had been gained. Now we have the trend toward cabinet tops which has given gas and electric ranges such distinctive appearance.

Similarly, for years the automobile industry patterned its first models after the horseless carriage before finally evolving a design of its own. Then, after performance had reached a point of perfection where it was difficult to achieve further outstanding distinction, we noticed a wave of design emphasis in the automotive industry which has created the sales stimulation necessary to make its unusual growth possible.

Similariy, the electric refrigeration industry has concerned itself until recently with developing performance efficiency. In form, electric refrigerators with the exception of the Norge cabinet are nearly the same as always; cabinets closely following the old ice box. Little attention has been given until lately to the creation of cabinet design as individual to electric refrigeration as the ice box was to ice.

Realizing that the point of functional improvement had arrived where increased efficiency was more difficult to attain, the Norge Corp. set out to achieve vital distinction in "eye-appeal."

As you know, we asked 100,793 American housewives to declare their wishes on appearance and features. From this we were able to design the 1933 Norge cabinet which represents a departure from the conventional cabinet design.

Gone is the protruding cabinet cover, relic of ice box days. Gone is the interruption spread between food compartment and mechanical door which disturbs the symphony of complete perpendicular lines.

Gone is all heavy hardware for which women declared such distaste. The sales stimulus of this improved appearance, which has set a new standard for style and beauty in the industry, jumped Norge sales this year beyond expectation.

The American public has turned art critic. Its artistic appreciation has been increased a thousand-fold in the last 20 years. From the cheap caparison of the gay nineties it has turned to modern aesthetic simplicity in a way that has thrown architecture, furniture, fashions all awry.

Gone are the complex whirligigs and filigrees which characterized old-fashioned design. Nothing overdone, nothing useless, nothing redundant has "eye-appeal" or wins the sales dollar today.

Most consumers are educated artistically to the point where old-fashioned design disgusts them. Any gaudy show that strays from the sheer verticals and rounded horizontals of modern simplicity is at once suspected as an attempt to deflect

(Continued on Page 6, Column 1)

Quick Service Speeds Sales —The Larkin Plan To Help You

QUICK delivery of Coils—from 12 to 24 hours to points East of the Rockies is a LARKIN feature made possible by Warehouses at Atlanta, Brooklyn and Chicago where complete stocks of 124 Standard Models and Sizes LARKIN *Original 100%* Vertical Surface Aluminum Plate Coils are available.

Distributors and dealers can make arrangements for this convenient service.

Coils for Beer Service

For merchandising either draught or Bottled Beer Larkin has developed special coils. Literature and data on request.

LARKIN
Refrigerating Corporation
Originator and Manufacturers
ATLANTA, GA., U.S.A

WAREHOUSES
Brooklyn - Chicago

NRA WE DO OUR PART

100% VERTICAL SURFACE

U.S. PATENT No. 1776238.

LARKIN COILS

60% AVERAGE SALES INCREASE

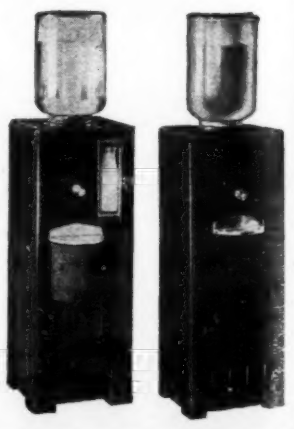
during 1933 as compared to 1932, proves the increasing popularity of Cordley Electric Water Coolers.

Large distributors gladly testify to satisfactory operation of the thousands of these Coolers in constant use during the past five years.

We are seeking for 1934 a limited number of additional responsible retail distributors in key cities. Enquiries solicited.

CORDLEY & HAYES
157 HUDSON ST.
NEW YORK, N.Y.

"water coolers since 1889"



58 Years of Refrigeration

Gibson is now engaged in producing the best refrigerators in all its fifty-eight years of refrigeration experience. The Gibson Corporation is one of the oldest and largest manufacturers of refrigerators in the world. It builds refrigerators only, and never has built anything else. Gibson *knows* refrigeration from A to Z.

The new 1934 Gibson MonoUnit electric refrigerators are designed and built for *Sales Leadership*. For the past two years Gibson has been acclaimed, "The Most Beautiful Refrigerator in the World." That's not just an advertising phrase. Expert stylists, designers and others, who have no connection whatever with Gibson, have expressed it as a fact. We believe you will say that the 1934 Gibson models live up to that reputation admirably.

Beauty goes a long way in closing sales, but beyond that, Gibson Electric Refrigerators, backed by 58 years of exclusive refrigeration experience, have unexcelled quality values.

When Gibson builds a refrigerator it is right in every detail. Gibson compromises not one iota with quality. Exhaustive quality tests are made of everything that goes into a Gibson from the condensing unit to the smallest screw. Compare the Gibson point by point with any other refrigerator.

The completed 1934 models have all the outstanding features which make electric refrigeration an absolute necessity in the home. Every feature is practical, and a real talking point. Gibson features are the features women demand and can use every day of the year.

During the ensuing selling season, every Gibson Dealer will be fortified with advertising and merchandising helpfulness that never before has been duplicated in Gibson history. It is a plan best calculated to aid each individual dealer in making sales, and will be liberally applied to each Dealer's territory.

The Gibson Plan for 1934 is one which no Dealer can afford to overlook.

GIBSON ELECTRIC REFRIGERATOR CORPORATION
GREENVILLE, MICHIGAN

OPINIONS

(Continued from Page 4, Column 5)

attention from lack of inherent fineness or fitness in the product.

Thus, I feel that product redesign is of crucial importance in our new economic order and of particular importance in the electric refrigeration industry in that a refrigerator arouses such pride of ownership and maintains such conspicuous position in the kitchen, which of all rooms is the most lived-in in the American home.

We expect that design will be as important a factor of sales stimulus in the electric refrigeration industry of the next few years as it has been in the automotive, the radio, and many other fields.

I feel that redesign in the next few years will give attention much to the interior of the refrigerator.

We of Norge feel that we are still far ahead of the industry in style and beauty, and in our 1934 models we have given attention to the redesign of the interior as well as the exterior.

6. This is a difficult question to answer in detail. We believe that the trend is distinctly away from the assumption of retail risks by the manufacturer.

Not only in electric refrigeration but in a number of other industries, such as farm implements, motor trucks, the oil burner industry, and others—branch operations in which the manufacturer assumes the retail risk—have not been so successful in the past few years.

In fact, it is quite generally demonstrated that a distributor type of operation, thoroughly acquainted with the local peculiarities and with a greater incentive due to investment in a going business, can deliver a better type of sales supervision than can a branch operation run by a manager whose main interest is in salary and over-ride.

In the second place, it is my conviction that distributor-controlled retail stores have some of the same disadvantages as factory-controlled branch operations from the retail standpoint, plus the added disadvantage of placing the distributor in direct competition with other retail dealers with whom he might want to do business in addition to his own retail operation.

I do not believe it is possible for a distributor maintaining a retail operation to act as a distributor for other dealers as well.

Without question, department stores are an important outlet for electric refrigeration and other home appliances. However, during the past 18 months department stores reveal that they are having some difficulty in specialty merchandising, and until they can adopt all of the merchandising principles which make specialty merchandising successful, they will continue to have more trouble than they are now experiencing.

The fundamental thing, in my way of thinking, to recognize in the trend of the electric refrigeration industry is that it is now poised in the middle of its expansion cycle.

Increasing selling resistances, which are natural as saturation grows, demand a new type of intensive specialty operation and outside selling which have always been necessary in other industries at this particular saturation point.

In other words, electric refrigeration is now taking on the characteristics of a direct-selling operation such as was experienced in the washing machine, vacuum cleaner, and other fields.

Thus, those outlets that will make the most of the 1934 refrigeration opportunity are those which maintain a good balance between inside and outside selling in their volume flow and who are trained in specialty selling outside the store—whether these be outlets of the furniture, department store, hardware, or straight electrical outlet type.

The Norge survey, previously referred to, shows that the greatest opportunity in 1934 is in the small towns and for that reason we believe the small town dealer at this time is of greater importance than perhaps any other type when you are considering the success of an operation from the over-all viewpoint.

7. Fundamentally, I believe that the condition of short-term indebtedness for household purposes in the United States is improving rapidly.

The Oct. 10 issue of *Domestic Commerce*, issued by the Bureau of Foreign and Domestic Commerce, published a table showing the total amount outstanding at the end of 1932 as compared with 1931.

This table revealed major shrinkage in outstanding indebtedness in such divisions as retail open accounts, retail instalments, short term cash loans; and it is reasonable to assume under the repressed buying of 1933 and the reported low rate of repossession by instalment houses, that the shrinkage has been even greater this year.

In other words, the average family is therefore in a better position to buy on instalment than before. For this and other reasons, I do not look for any material change in present instalment selling payment or methods.

8. Without question, volume from room coolers and other types of air-conditioning equipment will add a larger portion to the industry's sales in 1934, although it would be hazardous to pretend to make a definite prediction of just what this addition might be.

Norge, after very careful study, thinks enough of the oncoming expansion opportunity for this type of equipment to have introduced the new Norge Aerolator this year—a winter air conditioner which provides air circulation, humidification, and washed air in the home.

Of course, this type of equipment is still in its pioneering stage and generally speaking we cannot expect a great sales stimulation until it comes nearer the threshold of expansion.

In other words, the market will slowly gain momentum and when a certain point in product development and education has been reached, it will flower out into major expansion volume in some such sort of manner as has electric refrigeration itself.

The equipment now available, speaking from the Norge standpoint, is practical and marketable. We are carefully watching all initial installations on the Aerolator and have recorded testimony from many homes proving that it is satisfactory in its performance.

9. We believe that the market for commercial refrigeration is just now entering a renewed expansion phase and offers a real selling opportunity for some years to come. For that reason we have this year added commercial refrigeration to the Norge line for the first time.

There are many adaptations which afford markets for commercial refrigeration which are, as yet, relatively unexploited. In addition, an interest in redesign of store interior which can be expected as an aftermath of the depression, should certainly increase the demand for this kind of equipment.

Finally, mechanical improvement and functional superiority lately achieved is bound to stimulate a certain amount of replacement business because many commercial installations of the past few years have been somewhat faulty due to the slower development of functional efficiency as compared with domestic electric refrigeration.

10. We feel that ELECTRIC REFRIGERATION NEWS has been of splendid service to the industry as the official clearing house for trade news and, in main, we believe that it has reported the happenings of the industry in an able, earnest, and straightforward manner.

We believe that its service in 1934 can be improved by giving more news attention to sales planning necessities, economic interpretations, market statistics, and specific discussion of problems, requirements, and trends.

In other words, I feel that it can perhaps be less a social instrument and more a business-building force. It might be helpful to give less feature to competitive family affairs and more to the suggestion of ideas that will improve the marketing practice of the industry.

We are entering on a new economic phase of intensive selling requiring additions to selling methods, new types of dealer support, greater sales training suggestions, a greater knowledge of what is going on and the necessity of basing plans upon established facts rather than hunches.

Your good paper should be of signal added service to the industry in ferreting out and publishing more of this kind of data.

JOHN H. KNAPP,
Vice president in charge of sales.

Gibson Expects Price Rise And Greater Volume

Western Union
Greenville, Mich.
Jan. 8, 1934.

Editor:

Believe 1934 sales will exceed 1933 and that price trend will be upward. We are expecting a very substantial increase in volume. We believe that styling will continue to be large factor together with modern up-to-date style of machines. ELECTRIC REFRIGERATION NEWS is of decided benefit to the industry.

CHARLES J. GIBSON,
President,
Gibson Electric Refrigerator Corp.

Codes of Fair Competition Praised by Swope

General Electric Co.
New York City
Dec. 23, 1933.

Editor:

These are difficult times to prognosticate and possibly it is human to turn to past prophesies, especially when they have turned out fairly well.

Last year I stated that the indices of use of power and revenue carloadings showed a continued upward trend and that therefore we were hopeful that this upward trend would continue.

Continuing the same indices through 1933, it will be seen that for the quarter ended June 30, 1933, they crossed the line and have been distinctly upward since. The fourth quarter has gone down from the high point but is still better than for the same period in 1932.

Now with codes of fair competition adopted in many of the industries, with the increased employment and increased purchasing power that has been brought about, these activities naturally and undoubtedly will cause some increase in prices to the ultimate consumer.

The problem of today is to have a greater revival in the capital goods industry, which has felt the increase but little, and with all the experiments that are being made and the hopeful and constructive attitude being shown, we are looking forward with confidence that 1934 will be a better year than 1933 in employment and in industry.

GERARD SWOPE,
President.

Merrick Looks for Revival For Heavier Equipment

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.
Dec. 30, 1933.

Editor:

The year 1933 closes with a much more hopeful feeling than existed in its early months. Business now is better than it was then. The improvement has not been on a steady line of progress. There have been intermediate advances and recessions.

Previous conditions had developed desperate straits and the demand was for far-reaching remedies. We have a varied and complex machinery of civilization. The application of remedial measures, aimed to effect universal good, impinged on these complexities with diverse and sometimes contradictory reactions.

The result was a definite confusion and uncertainty in the mind of the potential buyer—a feeling that the rules of the game were changed and changing in a way to make calculation for the future too difficult to venture.

Whether the buyer was one dealing in commodities or services or securities, and whether for his own personal use or for business advantage, the effect was the same.

Without buyer confidence, no business moves beyond what is involved in satisfying the ordinary necessities of life.

The hopeful thing for 1934 lies in the indication that crystallization of the changed rules of the game seems about at hand. Also, a better appreciation is evidencing itself of what, both as to industry and as to government, the import and uses of the changed rules may be. If this hope is realized and converted into confidence, busi-

(Concluded on Page 7, Column 1)

To Sell Air Conditioning to Refrigeration Dealers—

The Information You Want is in the 1934 Refrigeration Directory
Where Can We Get More Facts On Air Conditioning
OFFICIAL GUIDE ★ OF THE INDUSTRY
1934 REFRIGERATION DIRECTORY

YOU CAN STILL MAKE THE 1934 DIRECTORY ★ ★

In 1933 we received hundreds of letters from distributing organizations and dealers concerning air-conditioning equipment. And the interest is constantly growing.

In air conditioning, distributors and dealers see a wonderful opportunity for profitable sales activity.

In 1934 distributors and dealers everywhere, both in this country and abroad, will refer to the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK to see what equipment is on the market and who makes it.

Your advertisement in this DIRECTORY will cost very little—yet it will prove a most effective means for securing new distributors and dealers.

Every worth while distributor and dealer of electrical equipment in this country and abroad will get the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK—it is the recognized Official Buyer's Guide of the Industry.

★

RESERVE SPACE FOR YOUR AD NOW

Forms close Feb. 1. The time is short. May we suggest that you write or wire now for rates on inserts, color, and preferred positions.

BUSINESS NEWS PUBLISHING CO.
550 Maccabees Bldg., Detroit, Mich.

OPINIONS

(*Concluded from Page 6, Column 5*)

ness upturn is assured and in substantial measure.

Any real revival of general business means certain improvement in the electrical manufacturing business. The service of electricity is universal. Its expanded use in commercial quarters and in the home, which modern developments have made possible, has been a great help throughout the years of depression.

There has been a continuing output in the lighter lines of electrical manufacture. An increase in industrial consumption of electricity such as must result from a general revival of production and interchange of manufactured products will, in due course, bring about requirement for the heavier lines of apparatus, the absence of which is now so keenly felt.

Taking all things into consideration, and without going into the field of prophecy, it can be said that the outlook for 1934 is definitely in the direction of improvement.

F. A. MERRICK,
President.

Factory Branches Important, Walter Seeger Finds

Seeger Refrigerator Co.
St. Paul, Minn.
Dec. 26, 1933.

Editor:

Replying to your letter with reference to my opinion as to what 1934 may have in store for the electric refrigeration industry.

I do sincerely believe that electric refrigeration sales in 1934 will be greater than those in 1933. My opinion is based upon the fact that Seeger Refrigerator Co. already have on file orders for a greater number than what we have built in 1933, and I believe that the styling of the cabinet will be the important selling part, along with a few more new gadgets.

The price will very naturally be up above 1933, but I hope and I am sincere in this, that they will not be any higher than the Jan. 1 level, because we certainly do not want to kill the goose that lays the golden egg, even though that egg may be small and slim.

I also believe that the NRA codes will help stabilize provided they are lived up to as intended.

As to the importance of retail distribution channels. I have placed them in the following order. Factory branch operations, distributor-controlled retail stores, department stores, specialty appliance dealers, together with the list in your letter, I will take the department stores out, and list them up as the third item of importance, and at the last of the list, I will put the public utilities. I believe that their activities will be very very much curtailed from here on.

With reference to instalment selling, if experience is any criterion, it can only mean that the down payment should be larger with shorter time and the elimination entirely of free trials and rentals.

Air-conditioning equipment is going to begin to come into its own in 1934, and will show a very very considerable increase—in fact will show on the percentage basis, by far the larger increase than any other part of the industry.

I do expect a considerable improvement in our commercial refrigeration equipment, in fact I believe, that from an increase standpoint it will run right close to air-conditioning equipment in 1934.

Now, last but not least, you know my opinion of the ELECTRIC REFRIGERATION NEWS. In a few words, it's the Bible of the industry.

W. G. SEEGER,
Vice president.

Appearance & Convenience Important to C. C. Hull

Rex Mfg. Co., Inc.
Connersville, Ind.
Jan. 3, 1934.

Editor:

We are very pleased to respond to your custom of past years in asking executives of the electric refrigeration industry for opinions on the state of the industry and on its probable future course. We have been, in the past, very interested in the reports you published in your ELECTRIC REFRIGERATION NEWS that you received from these various companies and if our contribution is of any value, we are very pleased to add our answer to those questions which you asked that come within the range of our operations.

1. We are anticipating that the electric refrigeration sales in 1934 will exceed those of 1933. Our reason for this belief is because business in general, we believe, is improving and there is no reason why the electric refrigeration industry should not participate in this general improvement.

2. We believe the most important selling points for the coming year will be the outward appearance of the refrigerator cabinet and the improved points of efficiency and convenience on the inside of the cabinet.

3. We believe the price trend will continue upward.

4. One of the effects of the NRA codes on refrigeration industry, in our opinion, is the fact that it will increase the labor costs of the cabinets and, therefore, have a tendency to assist the entire refrigeration industry in securing a price that will come more nearly insuring a profit than has been the case within the last three or four years.

5. We are very strongly of the opinion that the style of the electric refrigerators will become more important in coming years.

Since our product goes to the manufacturers of electric refrigerators, we can not intelligently answer your sixth, seventh, eighth, and ninth questions.

10. We believe the ELECTRIC REFRIGERATION NEWS has fulfilled its mission, so far as our observation goes, in all respects. We can not speak in too highly complimentary terms of your paper and the manner in which it is fulfilling its mission.

We are wishing for you a very prosperous year of 1934.

C. C. HULL,
President.

Davidson Outlines Work of Refrigeration Bureau

Electric Refrigeration Bureau
Edison Electric Institute
420 Lexington Ave., New York City
Dec. 26, 1933.

Editor:

The electric refrigeration industry enters the new year under conditions which offer a sharp contrast to those which marked the beginning of 1933. To look back upon those first few weeks of last year would be exceedingly unpleasant were it not for the fact that, as we now know, they marked the turning point from which one of the most remarkable records in the annals of American industry has been achieved.

The upturn started in April. By the end of May it had gained such headway that a new record for the year already seemed in the making. June broke May's all-time record for a single month and for the four successive months ending with October all comparative monthly sales records of previous years were broken. Including a conservative estimate for November and December, the sales for the year reached the approximate total of 1,050,000 unit, 100,000 more than in the previous peak year, 1931.

With the industry entering the new year under such headway, and with the saturation even now approximating only about 24 per cent, it would seem that the prospects of a new record in 1934 were extremely bright.

Still, fine as was the achievement of last year and bright as the new year's outlook seems to be, one's mental reactions resolve themselves into a dizzy whirl when one tries to contemplate what might have been accomplished, and what might still be accomplished, with more intensively organized effort devoted to cooperative sales promotion activity.

The Electric Refrigeration Bureau can look back upon the past year with pardonable pride in its accomplishments under most trying conditions. In saying that money has been exceedingly scarce I am only stating what everybody knows and what everybody is probably tired of hearing.

Yet the 400 local bureaus which constitute our organization have carried on in defiance of depression and discouragement. Under the guidance and with the assistance of the national bureau local cooperative activities, locally financed, have been maintained.

Budgets have been necessarily curtailed in many instances, yet the year's expenditures for these local activities have been sufficient to raise the total for the three years of the bureau's existence to upwards of $3,000,000, approximately one-half of which sum has been contributed by local utility companies.

Nor has money been the only contribution of the central stations to the bureau activities. In almost all of the 400 local bureaus, they have been the moving force in the cooperative program, providing local chairmen from their personnel, taking the initiative in all matters of organization, arranging for meetings, and donating the use of their showrooms and auditoriums for cooperative exhibits.

To the credit of the local bureaus I wish to record the fact that they were undaunted throughout those first 10 weeks of 1933 which in retrospect stand out as probably the darkest period in our country's industrial history.

They faced the situation with courage and planned for the future. Meetings were held, funds were raised, and between the first of March and the end of May electric refrigeration shows were held in hundreds of communities.

Impetus was given to these and other local activities by the national bureau through its Legion of Honor contest which was designed to give fitting recognition to outstanding individual accomplishments in local cooperative organization and sales promotional effort.

The data submitted to the New York office of the bureau in behalf of those selected in their respective communities as candidates for these regional honors proved a veritable revelation in their story of enterprise, ingenuity and, in many cases, downright pluck in the face of apparently insurmountable obstacles.

Electric Refrigeration Week, Sept. 30 to Oct. 7, found some 200 cities in all sections of the country participating in this annual bureau-sponsored event. Entrants in the contest to determine the most successful shows reported almost without exception larger attendance, greater public interest, and a larger number of sales and prospects than marked the fall shows of either of the two preceding years.

Complete information as to the extent of participation in the recent Christmas window display contest is not yet available. However, entries began coming in Dec. 1, and I am confident that when the returns are all in it will be found that there was wider cooperation in this activity on the part of distributors, dealers, and central stations than ever before.

The offering of a special prize of $100 to the local bureau having the largest representation of contestants in proportion to the number of retail sales outlets was expected to arouse a maximum of interest throughout the country.

The work of the central organization in New York has been handled energetically and efficiently. Through lack of sufficient funds, a condition imposed by the economic situation, it has been impossible to maintain what might be termed an ideal national program for a cooperative campaign which possesses the potentialities which this one holds.

The ideal program would include a succession of nationally sponsored activities covering a large part of the year, backed by a comprehensive but not too ambitious campaign of national advertising.

In the absence of such a program the New York office has maintained the closest possible contact with local chairmen, calling attention to approaching activities, offering suggestions, and passing on ideas which had proved fruitful of results in other communities, and offering encouragement where interest seemed to be lagging.

Our limited field force has covered a large amount of territory with most gratifying results, not only from the standpoint of the bureau, but also from that of the communities served. No fewer than 194 electric refrigeration meetings, held in more than 30 states, have been addressed by bureau representatives in the past year.

This means that there has been an average of two such gatherings held every three business days throughout the year. The attendance of dealers, distributors, and central station representatives at these meetings has averaged over 100, and reports as to the immediate benefits derived have been unanimously favorable.

J. E. DAVIDSON,
Executive chairman.

1,250,000 Units Will Be Sold in 1934—D'Olive

Western Union
Chicago
Jan. 8, 1934.

Editor:

Our most conservative estimates indicate a million and a quarter units for 1934. The selling points that will move refrigeration will be those that a two-fisted salesman can get his teeth into. There should be some upward price adjustment.

The maintenance of NRA codes will undoubtedly improve the general situation. Styling is always important. Department stores will become more important as outlets. Furniture stores likewise.

Our experience has been that ELECTRIC REFRIGERATION NEWS is most reliable source for up-to-date information.

CHARLES R. D'OLIVE,
Refrigeration Sales Manager
Stewart-Warner Corp.

Staggered Work Weeks Approved by Johnson

WASHINGTON, D. C.—A staggered system of alternate work weeks of four days, totaling 32 hours a week and five days totaling 40 hours a week has been approved for the Western Electric Co., the Teletype Corp., and the Bell Telephone Laboratories by Administrator Johnson of the NRA.

The code of fair competition for the electrical industry prescribed a maximum work week of 36 hours. This would necessitate half-day operations and, under some conditions, full-day operations before or after a holiday.

The above named companies, petitioning for the exception which Administrator Johnson has approved, stated that half-day operations are uneconomical since many processes require more than four hours to perform. Employes prefer full days off and desire them before or after week ends and holidays.

Under a strict interpretation of the 36-hour-per-week clause of the code this could not be done, but by working five days one week and four days the next, all at 8 hours per day, the code requirement of 36 hours weekly is averaged, the workers have their days off consecutive with holidays and week ends and the manufacturers operate more efficiently and economically.

For these reasons, which were presented in petitions from the companies, including expressions of preference for the stagger plan from workers, General Johnson approved the exception without resorting to a public hearing.

WANTED

A RETAIL SALES MANAGER

. . of a Type that is Hard to Find!

WE are searching for the proverbial needle in the haystack . . . a man of extraordinary capabilities in the hiring, training and directing of retail specialty salesmen. A man now employed in that capacity, with a record back of him that proves his ability.

Men like this, we know, are hard to find; but somewhere there must be such a man looking for new opportunity to test his mettle; anxious to grow.

And we want him with us.

We want him with us without delay, to participate in the launching of an aggressive, enlarged marketing program for 1934. Our plan of operation has been thoroughly proved during the past year in several test territories. We have a product, which unbiased experts willingly concede, is first in its field in completeness and efficiency of its service and in convincing sales features. Altogether, we have an unusual proposition to attract and hold a man of unusual calibre.

Our requirements are not easy to meet; but if you are accustomed to earning better than the average income, and are looking for a new hold on the ladder to even higher figures . . . and if honest self-analysis tells you that you are the man we are seeking, write us at once, giving complete details, and enclose photo.

Appointments for personal interview will be arranged.

POTTER REFRIGERATOR CORPORATION
BUFFALO, NEW YORK

Our company is introducing for the year 1934 eight new models genuinely competitive in price with the recognized leaders in the trade, with quality strictly up to the highest Potter traditions, all embodying Potter Air-Conditioning and other features which place the Potter Refrigerator in a merchandising class by itself, literally beyond competition.

ELECTRIC REFRIGERATION NEWS
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EDITORIAL AIMS
To encourage the development of the art.
To promote ethical practices in the business.
To foster friendly relations throughout the industry.
To provide a clearing house for new methods and ideas.
To broadcast the technical, commercial, and personal news of the field.

VOL. 11, NO. 2, SERIAL NO. 251, JANUARY 10, 1934

Bright Future

WHETHER it was Roosevelt's recovery program, or the anxiety of people to put their money into tangible and useful things rather than in banks and bonds, or the eye-appeal of styled cabinets, or the conviction that electric refrigerators were at last proved products, we probably will never know. But refrigeration enjoyed the biggest year of its history in 1933—a record paralleled by no other industry.

And what is even better, all signs seem to point toward an even better year in 1934. One need only read the highly optimistic letters from the industry's leading executives—conservative and generally none too sanguine men—in this issue of the NEWS to get the picture. No carping critics of the NRA in this group; no fears of possible inflationary havoc; no dark hints that present recovery may be synthetic and will probably wash out when the borrowed "easy money" stops.

To a man these executives are appropriating more money for bigger promotional campaigns in 1934—convincing evidence that they foresee better days ahead.

Almost to a man, the executives opine that electric refrigeration sales in 1934 will pass the 1933 mark to set a new all-time record. Typical of the opinions given is that of George W. Mason, president of Kelvinator Corp., who says: "Unless new conditions, absolutely unforeseen at this time, should arise, it seems to me that 1934 holds every promise of an even greater refrigeration volume than was enjoyed in 1933." Norge Corp.'s Vice President John Knapp predicts that '34 sales will exceed this year's record by 35 to 50 per cent.

What selling points will be important in 1934? It appears that salesmen for a good many companies will be instructed to stress convenience above all else this year. Second in importance with a number of manufacturers is styling. "We believe that utility and styling will be the important features in refrigeration activity for next year," says P. B. Zimmerman, manager of General Electric's refrigeration department, and his statement is representative of opinions given by a number of executives.

Generally speaking, the industry is giving increased attention to style in its products. Norge's John Knapp mentions that his company has so redesigned cabinet exteriors that considerable work is now in process on the styling of interiors. Powel Crosley and Charles J. Gibson emphatically declare their faith in styling as a sale maker. Two other executives—Kelvinator's Mr. Mason and William C. Grunow—definitely favor styling, but add that it should be applied conservatively, that "the kitchen is not the place to show off fancy pieces."

At the beginning of 1933, manufacturing heads were not in agreement as to what the price trend for that year would be. Apparently, no such difference of opinion exists now. That prices will show a definite upward trend is the prediction of every executive reporting, most of them stating that increased labor and material costs make such a movement likely — a reduction impossible.

Closely linked with this question is that of NRA's probable effect on the refrigeration industry. With a number of other executives, G. M. Johnston, president of Universal Cooler Corp. and chairman of the Refrigeration Division of Nema, believes that "while National Recovery Codes may be annoying and embarrassing at times, they have and are supplying many constructive elements of control in the industry which were sadly needed."

Perusal of the executives' letters does not reveal a unity of opinion on the relative merits of various types of retail outlets. It appears that those outlets which have been entirely satisfactory to some manufacturers have been unsatisfactory to others. William C. Grunow says, "We feel that independent . . . stores will become of more and more importance," but T. Irving Potter, president of the Potter Refrigerator Corp., believes that there is an over-expansion of dealer outlets, that the industry is "spreading the butter of profits too thin."

J. Henry Schroeder, vice president of Sunbeam Electric Co., and Charles R. D'Olive, manager of Stewart-Warner's refrigeration division, expect department stores to become increasingly important in refrigerator merchandising, while Norge Corp.'s Mr. Knapp states that until these outlets "can adopt all of the merchandising principles which make specialty merchandising successful, they will continue to have more trouble than they are now experiencing." He feels that small-town appliance dealers will be of great importance henceforth, and whereas he is definitely opposed to factory- and distributor-controlled retail outlets. Seeger Refrigerator Co.'s Walter Seeger rates these two types of outlets as most important in retail distribution.

Industry executives are in pretty general accord that instalment selling is a business-building and sound operation in refrigeration merchandising, and believe that it will continue to be used widely. Several of them express the *hope* that during 1934, the trend will be toward larger down payments and shorter terms. Taking a more definite position, John F. Ditzell, general sales manager of Grigsby-Grunow Co., says: "Instalment selling will unquestionably increase because of higher prices. Larger down payments, however, will be the trend."

There is apparently widespread confidence throughout the industry that sales of commercial equipment will show a marked increase in 1934, particularly as the businesses of prospective purchasers are placed on a profitable basis once again. Most manufacturers anticipate a fair business in air conditioning, but believe that several years will be required to produce air-conditioning sales in large volume.

WHAT OTHERS SAY

Poor Food, Not Climate Hurts Whites In South Africa

THE Carnegie commission on the poor white problem in the Union of South Africa has finished three years' work and has published a voluminous report, really a series of reports, says the Cape Town correspondent of the Journal of the American Medical Association.

The medical and hygienic aspect of the problem has been studied by Dr. Murray, one of the assistant health officers of the department of public health of the Union. He finds that there is no evidence to show that climate, humidity, or excessive sunlight leads to physical deterioration and, contrary to most other observers, he is not convinced that malaria plays any important part in the production of poor whites.

"His data on the latter point, however, are far from conclusive and tend to show merely that in the small groups that he studied the physical effects of malaria could be regarded as negligible," declares the correspondent. "He is of the opinion that malnutrition, largely due to insufficient and badly prepared food, is a considerable factor in retardation. The other reports deal with the economic and educational aspects of the problem."—*Detroit News*, Jan. 8, 1934.

Crosley Men View Shelvadors, Inspect 500-kw. Radio Station

(*Continued from Page 1, Column 5*)

of jutting out in angular relief as they did last year.

Prices range from $99.50 to $175 (lacquer), and $119.50 to $205 (porcelain), delivered, installed, with one year's free service. With each model will be furnished a bottle of fluid which, when applied to ice cube trays, prevents them from sticking—an invention of Powel Crosley, III. Semi-automatic defrosting and interior electric lights are standard equipment on all models, while the Tri-Shelvadors each have a self-closing door to the ice tray chamber.

All models are now ready to ship, and production models were shown at the meeting. Last January at the distributor's convention, only hand-built wooden Shelvadors were available; and shipments didn't start until February.

Cabinets are being manufactured both by Crosley and Rex. Thermocraft and Balsam Wool insulation are used. Tagliabue and Ranco controls are employed with Delco motors. The same compressor, which is interchangeable with the 1933 compressor, serves all models.

As is his custom, President Powel Crosley, Jr., took entire charge of the proceedings, and was on his feet practically all the time during the two-day convention. Vice President Lewis Crosley, Chief Engineer Fred Johnston, and Advertising Manager G. H. Corbett interjected detailed information into the discussions.

Mr. Crosley also introduced Howard Richardson, onetime Chicago distributor for Crosley, who is Mr. Crosley's new assistant in charge of sales planning and promotion. Salesmanager Neil Bauer will spend most of his time on the road during the coming year.

Perhaps the most interesting part of the convention—aside from the introduction of the new refrigerator and radio models—was a trip to neighboring Mason, Ohio, where the new 500,000-watt transmitter (10 times as powerful as any other existing radio broadcasting transmitter) has been installed for Crosley station WLW.

Put up by General Electric, Westinghouse, and RCA engineers at a cost of $400,000, and located within 150 miles of the nation's center of population, waves from this new station will penetrate to the farthest recesses of America. Although a permit to use this transmitter has not yet been granted by the Federal Radio Commission, Crosley officials do not expect any great difficulties in obtaining one.

Tubes costing $1,750 apiece (when one of these tubes blows up, Mr. Crosley remarks, it's something to sit down and cry about) are used in the last stage. The 831-ft. antenna tower is a single steel structure made like two pyramids—the lower one standing on its point, and the upper one resting on the base of the lower.

It is rigged with guy wires anchored in concrete. The point rests on a ball in a porcelain socket, completely insulated from the ground. Center base is 400 ft. square.

Operating from 17 to 19 hours a day, this station will broadcast the Crosley name at least every 15 minutes. Sustaining programs specifically advertise Crosley products.

Thus, in addition to making a profit on the commercially successful station WLW, Crosley gets a tremendous amount of free radio advertising for its radios and refrigerators. With the new 500,000-watt station, this radio advertising will become national in scope.

Prepare Sales Manual

Coincident with the introduction of its 1934 line of electric refrigerators Crosley Radio Corp. has prepared its first refrigeration sales manual for the Crosley field organization. The announcement of the manual was cheered heartily and prolongedly by the distributors.

The manual is a dual-purpose sales publication—first, it can be used by distributors in their efforts to sign up dealers, and second, it can be used by dealers and retail salesmen in prospect promotion. The loose-leaf construction of the manual makes it possible for the salesman to remove any sections which would not be of interest to a prospect.

Like most Crosley publications which are designed to be read by the field organization, the manual opens with a personal message from President Powel Crosley, Jr., in which he points to Crosley's rise in the refrigeration field and the sales features of the new line.

Next is presented the new model with its many features. There is no crowding or "hurrying" in the make-up of the manual, each item is presented as it might be at a sales convention at which the new line is being introduced.

First picture is that of a stocked model, with door swung open, to give the reader a view of all the new features at a glance.

Next view is of the exterior, to show the full length, rounded door and legless base.

Following this are illustrations and expositions of the "exclusive Crosley convenience features," which include the Shelvador, Shelv-A-Tray, Shelvabasket, and Storabin. The explanation for the inclusion of each of these features is given in brief and simple language.

Other talking points of the new model such as the ventilated front, self-closing ice tray chamber door, features of the unit and cabinet construction, etc. are presented in the following pages.

The next section "catalogues" the

(*Concluded on Page 9, Column 1*)

Specifications of Crosley Refrigerators

Crosley Radio Corp., Cincinnati, Ohio

Model No.	EA-35	EA-43	E-43	E-55	E-70
Cabinet Specifications					
Overall dimensions (in.)					
Height	48¾	54¾	56⅝	57⅛	58⅞
Width	23⅞	23⅞	23⅞	29	32¾
Depth	24⅞	24½	24½	25⅞	26⅞
No. of doors	1	1	1	1	1
Storage Capacity					
Gross food storage (cu. ft.)	3.75	4.72	4.72	6.27	7.75
Net food storage (cu. ft.)	3.5	4.3	4.3	5.51	7.05
No. of shelves	3	4	4	4	4
Total shelf area (sq. ft.)	7.5	9.15	9.15	11.6	14.9
Shelf area less door (sq. ft.)	6.35	7.85	7.85	9.62	10.97
Ice Cube Trays					
No. of trays	2	3	3	4	5
No. of cubes produced	42	42	42	63	84
Weight of cubes (lbs.)	2.6	3.9	3.9	5.2	6.5
Thickness of Insulation (in.)					
Top	2¾	2¾	2¾	2¾	2¾
Sides	2⅞	2⅞	2⅞	3¼	3½
Bottom	2¾	2¾	2¾	3¼	3½
Compressor Specifications					
Motor size (hp.)	⅛	⅛	⅛	⅛	⅛
Compressor speed r.p.m.	540	540	540	540	...
Compressor bore (in.)	1½	1½	1½	1½	1½
Compressor stroke (in.)	1⅝	1⅝	1⅝	1⅝	1⅝
No. of cylinders	1	1	1	1	1
Price, delivered and installed	$ 99.50	$117.00	$130	$150.00	$175
Price with porcelain exterior	$119.50	$139.50	$155	$177.50	$205

* * *

Cabinet Materials
Makes of cabinet.....Crosley & Rex
Material used for frame.....Wood
Finish of shelves.....Tinned
Material used for breaker strip.....Wood
Material used for gasket.....Rubber
Make of insulation .....Thermocraft

Finish
Cabinet finish, exterior.....Lacquer, porcelain on special order
Cabinet finish, interior .....Porcelain

Hardware
Process of manufacture.....Stamped
Basic metal of hardware.....Brass
Finish of hardware .....Chromium

Control
Makes of control.....Ranco & Tagliabue
Type of control.....Temperature
Temperature regulation method....Manual
How defrosted.....Wide cycle position on switch

Evaporator
Make of evaporator.....Crosley
Evaporator construction .....Shell
Metal used .....Steel
Type of refrigerant control.Capillary tube
Type of ice cube trays.....Aluminum

Motor
Make of motor.....Delco
Type of motor .....Repulsion-induction

Compressor
Make of compressor .....Crosley
Type of system .....Conventional
Type of compressor .....Reciprocating
Compressor drive .....Belt
Location of compressor .....Above

Condenser
Method of cooling.....Fan
Type of condenser.....Finned tube

Refrigerant
Refrigerant used.....Sulphur dioxide
Amount in system.....2 lbs.

Special Features
"Shelvador" and interior electric light on all models. "Shelvatray," "Shelvabasket," and "Stora-bin" on E-43, E-55, and E-70.

Policy
Guarantee on cabinet .....1 year
Guarantee on system .....1 year
Serviced by..Dealer, distributor, & factory

14 Models in New Crosley Radio Line

(Concluded from Page 8, Column 4)

various models in the 1934 Crosley lines, giving detailed specifications on each cabinet.

Advertising men would probably label the next section of the manual as "institutional" copy. Photographs of the Crosley factory, the story of WLW, the powerful Crosley broadcasting station, a history of the Crosley refrigerator, and finally an exposition of Crosley standards of manufacturing precision, done in an extensive manner, comprise this part of the manual.

Factory Photographs

The captioned photographs depicting the manufacturing, testing, and proving ground operations in the manufacture of Crosley refrigerators act as a substitute for a trip through the factory in imbuing the salesman with the "price of the product" feeling.

The latter part of the manual is devoted mainly to promotion aimed at the prospect. Stock arguments for electric refrigeration are quoted, and there are testimonials from users.

Ultra Moderne Radios

Six full-sized cabinets, five table-top models, and three compact "travo" sets make up Crosley's new Ultra-Moderne radio line.

Dual Fiver Lowboy is the lowest priced of the standard models, costing $39.50. It is five-tube superheterodyne, and, like all the dual models, is equipped with dual range for picking up police calls, amateur sending stations, airplane messages, and standard broadcasts. Cabinet is of Nyssa wood, rosewood, and satinwood.

Next in the large models is the Dual Sixty Lowboy, featuring a cabinet design with V-matched pin-stripe walnut center panel, stump walnut stile, and satinwood and zebra wood frame for the center panel. Price of the Sixty Lowboy is $50, and it is a six-tube superheterodyne equipped with dual range.

Dual Seventy Lowboy, selling for $59.50, has seven tubes and dual range. Panels flanking the center panel slope toward the back.

The Crosley Dual Ten Moderne—a 10-tube superheterodyne—has a cabinet with fluted base, recessed front panel of V-matched pin-stripe walnut veneer, grained stump walnut pilasters, and top and end panels of walnut veneer. It is priced at $69.50.

12-Tube Model

Costing $85, the Dual Twelve Moderne has 12 tubes and the dual range feature. Its cabinet has been worked out in walnut, Carpathian elm, and satinwood veneer with an arched center panel.

Highest priced model ($99.50) is the Dual 140, which combines all features of the other models—dual range, 14 tubes, automatic volume control, meter tuning, static control, continuous tone control, and an auditorium-type dynamic speaker.

Three dual range models are table-top sets—the Dual Fiver, Dual Sixty, and Dual Seventy. Chassis, number of tubes, and speaker of these are the same as in the corresponding lowboy models.

Dual Fiver is priced at $26. A slightly broader cabinet houses the $35 Dual Sixty.

Styling of the Dual Seventy gives it graduated shoulders and silver front flutings. It is completely paneled in Nyssa wood. Cost of the model is $45.

Other Table Models

Two other table models are the Crosley Forty ($19.99) and the Crosley New Fiver ($23.50). The Forty is a four-tube superheterodyne model built on modernistic lines with full-floating moving coil, electro-dynamic speaker, illuminated dial, and combined volume control and on-off switch.

Raised on a fluted base, the New Fiver is a five-tube superheterodyne with similar features to the Forty. It has a completely stabilized chassis.

Lowest priced of the three portable models is the Travo, selling at $18.50. Enclosed in an all-metal brown and bronze cabinet, this four-tube superheterodyne can be plugged into any socket, AC or DC. It is equipped with a pilot light, attached antenna, electro-dynamic speaker, and requires no ground.

The black-and-silver Travo Deluxe, next in the line, has a four-tube superheterodyne circuit for 110-volt AC, DC operation. Employing the same features as the Travo, it costs $19.95.

Crosley Travette Moderne, selling for $28, is the highest-priced portable set. It is a five-tube superheterodyne operating on AC or DC current, and has the additional feature of automatic volume control. Cabinet is modernistic, made of zebra wood and satinwood overlays, and has a non-tarnishing chromium plated grille.

Distributors Present

Present at the convention were:

J. W. Hutchinson, J. E. Aitken, Owen Smith, Aitken Radio Corp., Toledo; T. W. Cook, Advance Electric Co., Terre Haute, Ind.; H. W. Leman and A. J. Folkerts, Advance Appliance Co., Peoria, Ill.

W. W. Melzenthin, T. B. Enterline, B. W. Gallaway, G. C. McKee, and H. L. Jackson, Americal Electric Co., St. Joseph, Mo.; David Slobodien and Fred Goldberg of Apollo Radio Co., Inc., Newark; Marshall Bond, Bond-Rider-Jackson Co., Charleston, W. Va.

H. L. Burns and H. W. Lincan, Burns Radio Co., Dayton; C. B. Lembach and F. S. Hoff, Bright & Co., Reading, Pa.; W. A. Henderson and L. J. Bonn, Lew Bonn Co., St. Paul, Minn.; Ben Boren, Boren Bicycle Co., Little Rock, Ark.

Wm. Hall, Jr., Baldwin Hall Co., Syracuse, N. Y.; A. H. Vogler, Central Supply Co., Denver; H. A. Gridley and F. H. Clay, Frank H. Clay Co., Kalamazoo, Mich.; N. J. Entienne, Chanslor & Lyons Stores, San Francisco; A. Turner, Central Auto Equipment Co., Springfield, Ill.

J. E. Johnson, H. O. Thomas, and S. J. Rapier, Cooper Louisville Co., Louisville, Ky.; D. C. Rockman, Geo. Collins Co., Boston; E. C. White and J. M. Parks, Carolinas Auto Supply, Charlotte, N. C.

F. Robinson, Crosley Distributing Corp., New York; C. S. Tay, Crosley Distributing Corp., Chicago; H. B. Green and W. C. Mackin of Dallas Electric Supply Co., Dallas, Tex.; J. E. Davidson, Davidson Sales Co., South Bend, Ind.

J. R. Steele and B. H. Cohen of Glasco Electric Co., St. Louis; Wheless Gambill, Jr., Gambill Distributing Co., Nashville; E. J. Hermann, E. J. Hermann Sales Co., San Antonio, Tex.; J. W. Hasson and W. R. Calloway of House Hasson Hardware Co., Knoxville, Tenn.

E. C. Hamlin, Hamlin Sales Co., Jackson, Mich.; J. R. Harris and Bruce Adamson of Harrisburg Standard Electric Corp., Harrisburg, Ill.; W. A. Shuler, Shuler Supply Co., New Orleans; H. W. Eskuche, Western Supply Co., Salt Lake City.

W. E. Titus, Radio Corp., Oklahoma City; Ray Sutliffe, Radio Retailing, New York City; C. H. Cox, Shreveport Blowpipe Co., Shreveport, La.; T. J. Lowery, Tyler Lowery Co., Bay City, Mich.

H. T. Wilson and J. W. Hull of Harry T. Wilson, Inc., Memphis, Tenn.; W. D. Plant and H. L. Guatkin, Reliable Tire & Accessories, Muskegon, Mich.; G. E. Richardson, Reliable Tire & Accessories, Grand Rapids, Mich.; N. B. Getty, Tenk Hardware Co., Quincy, Ill.

J. T. Cecil, Interstate Hardware, Inc., Bristol, Tenn.-Va.; R. Leinman, Northern Hardware Co., Menominee, Mich.; C. E. Lytle, Southern Minnesota Supply Co., Mankato, Minn.; H. G. Roth and Charles Blowers of Ott Heiskell Co., Wheeling, W. Va.

W. B. McKenzie, Power City Radio, Sioux Falls, S. D.; Howard Buchwald, Lincoln Sales Co., Baltimore; C. Taylor, Wholesale Distributing Co., Harrisburg, Pa.; D. C. Lappin and S. Rabichin of Lappin Electric Co., Milwaukee.

H. R. Perkinson, Tower Binford Co., Richmond, Va.; G. C. Miller, Miller Electric Co., Utica, N. Y.; D. M. McInnis, Teague Hardware Co., Montgomery, Ala.; F. M. Jackson, Jr., and J. W. Clay of Perfection Mattress & Spring Co., Birmingham, Ala.; W. T. Noss, Rogers & Baldwin Co., Springfield, Mo.

M. J. Lewis and David Shuman, Lewis & Carnell Co., Philadelphia; V. H. Pollard, Pollard Hasselbalch Co., Omaha; E. T. Legg and G. H. King of Stimpson Sales Co., Wichita, Kan.; P. T. Scannell, Southern N. Y. Electric Co., Elmira, N. Y.; James Mahoney, Interstate Hardware, Inc., Bristol, Tenn.-Va.

A. C. Benike, Benike & Culver, Madison, Wis.; A. W. Wheeler and L. C. Wheeler of Hardware Products Co., Sterling, Ill.; P. B. Eshelman, Eshelman Supply Co., Lancaster, Pa.; Ernest Kronson, Ontario Electric Co., Buffalo; J. G. Erwin, Kentucky Mine Supply Co., Harlan, Ky.; Herndon Thomas, Beck & Gregg Co., Atlanta.

Herbert Hieb, Hieb Distributing Co., Des Moines, Iowa; G. F. Taubeneck and J. T. Schaefer of Electric Refrigeration News, Detroit; O. C. Mauer, H. C. Fuller and H. L. Brewer of Kiefer Stewart Co., Indianapolis; H. W. Goldstein, Anchor Lite Appliance Co., Pittsburgh.

J. B. Harris, Harris Hardware & Supply Co., Kingston, Pa.; J. D. Terrill, McGowin Lyons Hardware Co., Mobile, Ala.; Arthur Talbot, Talbot Brooks & Ayer, Portland, Me.; C. C. Matthews, E. S. Fisher, C. J. Hollatz, and H. Dunning of Kenrad Radio Tube Corp., Owensboro, Ky.

T. J. O'Brien, Hartford Electric Co., Hartford, Conn.; Samuel Cohen, Providence Electric Co., Providence, R. I.; R. C. Bohannan, R. C. Bohannan, Inc., Columbus; H. O. Smith, Hardware & Supply Co., Akron, Ohio.

Norge Wholesale Men Will Convene Jan. 22

(Concluded from Page 1, Column 1)

will hear a complete presentation of the program to be followed at a series of Norge dealer meetings starting the following week.

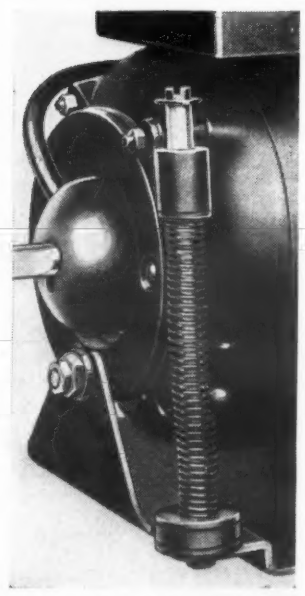
Two crews will hold the meetings. The first will be headed by Mr. Knapp and A. W. Seiler, executive vice president of Cramer-Krasselt Co. (Norge advertising agency), and will cover the eastern half of the country, holding a total of 31 meetings in as many cities.

Second crew will be led by Mr. Sterling and G. E. Stedman, Cramer-Krasselt's vice president in charge of market planning. Covering the western half of the United States, this group will hold 23 meetings.

Accompanying each crew will be a home economist and a representative of Commerce Credit Co. Glenn H. O'Harra, Norge eastern sales manager, and R. E. Densmore, western sales manager, will assist the groups in their respective territories.

Mr. Knapp's first meeting is scheduled for Feb. 1, and will be for dealers in the Detroit area, while Mr. Sterling's series will open Jan. 29 in Waterloo. Program for all meetings will be standardized, and each crew will carry its own paraphernalia for staging the sessions.

Another PATENTED EXCLUSIVE FEATURE DELCO AUTOMATIC BELT TIGHTENER



Note detail of belt tightener with snubber at top of spring.

Delco again improves its motors for electric refrigeration. The exclusive belt tightener attachment now eliminates the necessity for a service call to tighten the belt on the compressor unit. The spring which acts against the pull of the belt maintains the proper tension to compensate for the stretch and wear of the belt. At the top of the spring, a snubber provides just enough friction on the rod so that variations in torque do not permit the motor to oscillate or the belt to slap. This is another feature—both for operation and service—which can be had only with Delco Motors. With its rubber cradle mounting, cork end-play take-up, non-spillable end-head, quiet operation and superior quality throughout, Delco is the motor for your refrigerator. More than 3,000,000 are giving uninterrupted home service today.

DELCO PRODUCTS CORPORATION
DAYTON, OHIO

BY GEORGE F. TAUBENECK - - -

Price Trends

Experience of the past has always been that other companies have followed Frigidaire's suit on prices—and usually right to the penny. Frigidaire established $130 as the almost universal base price on household electric refrigerators in the spring of 1932, and $112 as the equally completely accepted base price that fall. And $96 became the "leader" price in the spring of 1933.

Following the trend, Grigsby-Grunow, Kelvinator, Leonard, Norge, Gibson, Williams, and Servel all announced price reductions from February through May.

There was a difference, however, in the announcement of most of these prices, compared with previous reduction announcements.

Kelvinator established its $97-base price and corresponding lower prices on the rest of its line in March—*but guaranteed the low prices for 40 days only* because of an expected upturn in commodity prices.

Williams Oil-O-Matic Heating Corp. followed suit in April by guaranteeing its new low prices, beginning at $99.50, only until May 8.

The last days of April brought a similar statement to distributors from R. I. Petrie, general sales manager of Leonard Refrigerator Co., who reported that the Leonard factory would fill future orders with the understanding that prices in effect at the time of delivery would be charged distributors.

Moving to protect itself against the expected price rise, Norge Corp. in May notified its distributors that it would accept future orders only on condition that the refrigerators would be paid for on the price schedule current at the time the units were shipped.

Distributors, too, were expecting price boosts due to the government's inflation program. From several manufacturers' sales managers came reports that their biggest distributors were placing orders for advance shipments at current prices—and a number of manufacturers were refusing to accept such orders.

Real difficulty from the distributors' standpoint was the shortage of refrigerators—they could be sold, but could not be obtained from the manufacturer. Many of the industry's factories were farther behind in filling orders, as indicated above, than at any previous time in history.

And since some manufacturers were stipulating that distributors pay the price current at the time of shipment, distributors were risking the possibility of selling a refrigerator to a customer on one price basis, and paying the manufacturer for that unit on another (and higher) schedule.

June really marked the turning point in the price situation, although Trupar announced an increase in its base price from $114 to $119.50 in the middle of April.

The avalanche of increases were all announced about June 21. Excerpts from that issue and succeeding numbers of ELECTRIC REFRIGERATION NEWS make an interesting running story:

Prices on all Leonard refrigerators will be increased June 28 . . . Kelvinator prices will be increased June 28; although officials have been working for the last week to revise the schedule, the new prices have not yet been definitely determined . . . Prices on all Majestic refrigerator models will be increased July 1 . . . Price increases ranging from $1.50 to $10 will go into effect today on all models of the Leonard refrigerator line; this makes $99.50 the base price of the line . . . Kelvinator's price increase, made public through a national newspaper advertising campaign two weeks ago, will range from $2 on the lowest price model to $51 on the 23-cu. ft. deluxe model . . .

Due to the mounting costs of raw materials, prices on the entire line of Leonard electric refrigerators will be advanced on Sept. 1 . . . Effective Sept. 1, retail prices of all Kelvinator household refrigerators will be revised upward, bringing the base price of the line to $112, installed, plus freight . . . Price increases have been placed on all but one model of the Westinghouse electric refrigerator line; these revisions—ranging from 50 cents to $75—make an overall increase of 6.47 per cent on the price of the line . . .

An increase of approximately 15 per cent in the factory list price of Gibson electric refrigerators becomes effective Friday, Sept. 1 . . . List prices on Norge electric refrigerators will be increased from 5 to 10 per cent, the increase to take effect Friday, Sept. 15.

Frigidaire, the bellwether of the industry, announced its sole 1933 price change Oct. 11, and brought its base price to $105, with a 10 per cent increase on its entire household line.

What Happened In 1933

To summarize the news which was made by the refrigeration industry in 1933, a resume of the year's events, trends, and movements started Dec. 27, is continued this week, and will be continued in the next issue.

Grigsby-Grunow followed suit with a new base price of $106.50. Westinghouse made a second price advance by raising costs on all but the three largest models in its line. These increases ranged from 7 to 14 per cent, and the base price was established at $129.50.

Reductions were twice made on General Electric's higher priced models—first on May 10 and again on June 21. To compensate for this, G-E raised its base price on the flat top model from $115.50 to $119, and on the Monitor Top from $159 to $164.

That the trend seems to be continuing upward is evidenced by the 1934 Norge prices, announced in connection with the introduction of its line in November.

The prices are to represent a considerable increase over those on corresponding models in the 1933 line, although prices on this year's line will remain in effect as of Nov. 1 until the new models are shipped, probably about Feb. 1. Recommended base price, installed, is to be $129.50 in the central zone.

What has happened, specifically, to refrigerator prices this year? Gathered statistics on installed prices seem to be about as follows for some of the important concerns in the industry:

Frigidaire has made only one increase in prices (see above), raising its installed base price $10, from $97.50 to $107. Estimated percentage of increase on the entire household line has been set at 10 per cent.

General Electric prices moved downward 1 or 2 per cent during 1933. Base model prices, however, went up $3.50 on the flat-top line and $5 on the Monitor Tops—making the new installed prices in the central zone $119 and $164, respectively.

Westinghouse raised the cost of its lowest-priced model, installed, from $115.50 to $129.50, a jump of $14. The whole line has been pegged upward approximately 17 per cent during the year.

Kelvinator upped its household prices about 9 per cent in 1933, and raised its base price from $97 in March to $112 in September—an increase of $15.

Grunow price schedule has been raised by 20 per cent this year. Lowest-priced Grunow refrigerator now sells for $169.50, $20 more than its old price of $149.50. The Progress line has remained the same, at $129.50 for its base model.

Norge base price was $119 at the beginning of the year, and also at the end of the year. On its new models, however, Norge is expecting to raise this ante by $10. Percentage of increase on the entire line is approximately 8½ per cent.

Leonard refrigerators are being sold at approximately 10 per cent higher prices than at the beginning of 1933. Addition of $14 to the base model price in the first zone has brought that figure from $98 to $112.

Differential in prices from the year's beginning to the year's end for the entire industry, based on these figures, seems to be approximately a 10 per cent increase.

On base prices, the average increase was about $9.

* * *

Styled Refrigeration

Style began to come into its own in the refrigeration industry in 1933, although it was given serious consideration and attention by manufacturers of electric refrigerators in the fall of 1932. ELECTRIC REFRIGERATION NEWS first began discussing it editorially in the spring and summer of that year. At that time the biggest problem was what to do about "fly-by-night" competition.

The "fly-by-nights" had electric refrigerators which looked just like those put out by standard manufacturers, but their prices were much, much lower. It was tough competition. By giving their cabinets distinctive style, however, it was thought that the leading manufacturers might make their refrigerators stand out in a line of many makes, and might lend extra punch to the pride-of-possession appeal.

Styled cabinets, it was suggested, should lend themselves especially well to department store merchandising. Then, too, it was reasoned, women can be sold so much more easily on appearance than on mechanical superiority.

Major manufacturers began to follow some such line of thought when they worked up their 1933 models. Several individually styled models made their appearance in the new lines, and the industry became definitely style-conscious.

Those who favor styling point to the following facts, and suggest that styling may have had something to do with them: (1) Fly-by-night competition has practically disappeared, and the business is being divided up among a few manufacturers, instead of being chiseled off by a great many; (2) the industry has enjoyed the best year in its history; and (3) prices went up.

Briggs Mfg. Co. of Detroit was the first to bring out styled cabinets, late in 1932, and sold one model to Grunow when that company entered the refrigeration field.

This cabinet was distinguished by streamlining, rounded corners at the top, flush doors, and "jewel-box" hardware. Bakelite breaker strips are used on both the door and jamb.

Grunow's sales record of close to 70,000 refrigerators sold during the first eight months of its career has been attributed in no little degree to the attention-arresting lines of the Briggs cabinet.

Another comparative newcomer to the field—Crosley—did itself proud this year. While the Crosley cabinet—built by Truscon Steel—could not be said to be particularly stylish, it introduced an extraordinary eye-appeal feature in the Shelvador. This was an advantage which every prospect could *see* at first glance.

Crosley was "in the money" this year, its estimated total sales running near the 50,000 mark.

Norge, Copeland, and Gibson each brought out modernistic and distinctive models in 1933.

First of the older manufacturers to introduce a styled cabinet was Norge, at its January convention in Muskegon. Visiting distributors saw a new Norge, streamlined, with rounded corners and edges rounded at the top. It rested on a black base, with the legs almost flush with the sides of the cabinet.

Only a fraction of an inch separated doors of the compressor and food chambers, giving the front of the cabinet an appearance of evenness in keeping with the cabinet's streamline construction. End panels were of one-piece manufacture, and a decorative touch was added by the black rubber strips sealing the end panels to the top and front.

Gibson came out with a styled addition to its line Jan. 4—the new L series. These two stunning models would have been considered ultra-ultra a few years ago.

Flush-fitting, curved top doors with an embossed door panel bearing the Gibson name carried out the streamline effect of the whole cabinet. Thirteen-inch legs supported the frame.

Following fast on the heels of these two, the new Copeland models were announced early in February.

Massive, modernistic lines gave the new Copeland (Truscon) cabinets a style easily distinguishable from that of any other refrigerator on the market. Set upon tiered legs, matched by the long lines of hinge and door handle, the new model recalled to mind the modern skyscraper.

Moreover, a unique scheme of placing the small unit inside (in an insulated compartment) the cabinet permitted the door to run almost the full length of the box—instead of allowing space at the top or bottom for the unit.

Frigidaire super-series cabinets were given softly rounded edges and raised straight-line designs on food chamber and unit compartment doors.

Servel used its pearlescent finish to get a new effect.

Top of the door in the new Potter refrigerators was given a gentle "tombstone" curve, and the hardware was matched to blend with the lines. Shelves were porcelain-enameled.

Mayflower refrigerators continued to wear an early American dress, with period-style hardware in chrome satin finish.

A flat recessed top and rounded exterior corners provided a streamlined effect in the Stewart-Warner 1933 line. O'Keefe & Merritt rounded the corners of its deluxe models.

Rudolph Wurlitzer contributed flush doors and semi-concealed hardware to the style picture. Although not as distinctively styled as the original models, Grunow's new Progress line, introduced in July, bore styled effects in its streamlining and in the embossed figure and Grunow crest used on the front of the cabinet.

Styling will undoubtedly continue to advance in 1934. New Leonard and Norge lines, announced in November, show marked modernistic trends in design.

* * *

Return of Beer

The advent of beer caused tremendous excitement, in the industry, and a great many companies started to put out beer coolers and equipment.

Sales, however, did not match expectations, because most of the entrepreneurs who went into the beer-cooling business weren't sure how long the demand for beer would last, and were not anxious to make investments in equipment for what might be a flash-in-the-pan business.

During the summer, however, comparative cost figures were developed which became potent sales tools in the hands of purveyors of modern beer coolers.

Manufacturers of commercial refrigeration were all set for the new market, with products combining advantages that the old-time beer seller had never enjoyed. Unlike the pre-prohibition commercial refrigerating equipment, the new automatic machines required no regular attention, and were practically trouble-free, compact, efficient, and self-contained (compressor, motor, and condenser built as a unit).

Companies which had furnished bars and fixtures for the pre-prohibition trade (such as Bishop & Babcock, Brunswick-Balke-Collender, and Liquid Carbonic) brought out new, sanitary, modernistic bars, vastly different from their predecessors of 13 years ago, with less mirror surface and employing synthetic materials such as Bakelite. Stainless steel and Monel metal contributed materially to the appearance of the new fixtures.

Most of the equipment was built for permanent installation in restaurants, beer gardens, hotels, etc., where a considerable quantity of beer is being cooled and dispensed, while a smaller number of portable assemblies were introduced for use in homes, clubs, etc.

Both self-contained and remote types were placed on the market soon after passage of the beer law.

New developments in beer-cooling apparatus were typified by the equipment brought out by Liquid Cooler Corp., Frigidaire Corp., and Russ Soda Fountain Co.

With its production facilities increased because of new larger quarters, Liquid Cooler began turning out Temprite beverage coolers at the rate of 100 per day in March.

The coolers were made available in sizes with capacities ranging from 7 gals. per hour to 100 gals. per hour, and were constructed not only to cool one beverage, but two and three beverages simultaneously.

Basic principle of the Temprite's operation is that of direct heat transfer from the beverage to the refrigerant, by immersion of the coil containing the beverage directly in the refrigerant.

Frigidaire got into production on its beer-cooling equipment during the first two weeks of April. The line featured capacities ranging from 3½ to 50 gals. per hour.

Models TT-12CC and TT-4C, largest of the coolers, are of the double refrigerant, water and beverage cooler type and are so constructed that the beer coil may be cleaned and sterilized by live steam or hot cleaning solutions.

In both models, a secondary refrigerant is used, sealed in an insulated tank. Beer flows through a continuous coil of block tin tubing immersed in the secondary refrigerant, causing the refrigerant to vaporize and the beer to be cooled. Vaporized refrigerant is condensed on the primary refrigerant coils above in the same tank, and falls back as a liquid to the bottom of the tank.

Housed in a square, insulated casing, model TT-12CC has two beer coils for cooling light and dark beer.

Russ Soda Fountain Co. of Cleveland introduced a new line of instantaneous beer coolers in August which incorporated a new system of foam control. The new system, intended to be used in Russ novelty boxes and coil boxes, maintains a high pressure in the beer keg yet serves beer from the faucet at a controlled low pressure which gives a moderate amount of foam in a glass with one draw of beer.

Purpose of the high pressure maintained in the keg is to preserve the carbonic gas content of the beer. This pressure is reduced successively in the connecting tubing, and inside coils of the cooling unit.

This latter consists of a tank containing the liquid refrigerant, and beer coils immersed in the refrigerant.

In the Russ system, as the pressure is reduced in the cooling coils by friction of the beer passing through the coils, the beer is also cooled at the same time—rapidly enough so that the solubility of gas in the beer is not reduced. As the beer is cooled from 60 to 40° F., its pressure may be reduced from 27 to 13 lbs., for the solubility is the same at each point, according to Russ engineers.

Refrigeration manufacturers flocked to this new market, especially those in the commercial field.

Filtrine Mfg. Co. brought out a bar insert cabinet beer cooler as early as January. Equipment for dispensing draft and bottled beer and a beer-keg cooler were announced by Consolidated Equipment Sales Corp. of Grand Rapids in March.

The new Fedders line, announced about the same time, included electrically refrigerated stationary and mobile coolers and dispensers for bulk and bottled beer, as well as self-contained cooling coils built for insertion in ice compartments of old-fashioned bars.

Two Servel beer coolers made their appearance in May, one a cabinet for chilling bottled beer, the other a self-contained bar unit for serving draft beer.

Late in the same month, Apex introduced a line of self-contained, draft-beer dispensing cabinets employing the Temprite instantaneous cooler.

Norge Corp. added bottle beer coolers to its household line in June.

Meanwhile York and Carrier were equipping breweries with refrigeration equipment, concerns like Brunswick-Balke-Collender, Brunner, and Dayton Pump were putting out beer-service fixtures, pumps, and draft arms.

The pace slowed down somewhat as the year waned. Fewer new coolers appeared on the market, the slackening business began to go to the old-established concerns which had "got their lines out" early. End of the year saw the trend shaping toward research in beer cooling, filling out of lines, and general improvements in models already on the market.

General Electric brought out its line of beer-cooling equipment, designed to fit the needs of any beer-dispensing establishment, at the November conference of G-E distributors in Cleveland.

Last important announcement of 1933 in beer cooling was made by Commercial Coil & Refrigeration Co. On Dec. 6 this Chicago concern introduced a new beer cooler, known as the "indirect instantaneous liquid cooler," employing forced circulation of a glycerine brine system between beer coils and direct expansion refrigerant coils.

* * *

N.E.L.A. to E.E.I.

When the 48-year-old National Electric Light Association was put quietly to rest on Jan. 12 of last year, and was succeeded immediately (without benefit of membership poll) by the Edison Electric Institute, speculation as to causes and consequences of this move was rife. It was the biggest utility news for 1933.

From all indications the action was taken to help put the utilities in a better light with the patently unsympathetic Roosevelt administration.

Principal considerations leading to the formation of the E.E.I., as outlined by President George Cortelyou of New York's Consolidated Gas Co. at the institute's first meeting in June, included the "necessity to effect a radical simplification in the size and character of the trade association . . . and to make a corresponding curtailment in its cost."

He continued, "A second factor was the need for an organization having the power to exercise some degree of discipline over its members with respect to their business practices."

Budget of the new association for 1933, according to its treasurer, Edward Reynolds, Jr., of Columbia Gas & Electric Corp. in New York City, was but 46 per cent of N.E.L.A.'s 1932 budget. Treasurer Reynolds also reported at the June meeting that the institute was operating well within its income.

Second purpose—that of controlling the membership—was brought about by the new constitution, which among other provisions requires members to publish "from time to time and not less than annually" complete certified financial statements; to see that information intended for the stock market and the public is accurate and clearly indicative of its source.

Functions of the E.E.I., according to the president, are three: To provide a medium for exchange of information and experience data among members; to formulate engineering standards, technical procedures, etc., making for the promotion of uniformity where it is advantageous; and to represent the electric utility industry in joint relations with other national industrial bodies.

When estimated in June, membership of the new association was said to be 75 per cent of the electric light and power companies in the United States, based upon production of electric energy.

A code of fair competition for utilities was drawn up by Edison Electric Institute and submitted to Administrator Johnson in August of last year.

Provisions of this code include one for an investigation of the electric power resources of the United States for the purpose of projecting a 10-year plan for the efficient and economical utilization of such resources in the interests of the public; and one for voluntary acceptance of the code provisions by publicly owned electric plants.

Every manufacturer, distributor and dealer can profitably use this new book

This new issue of the Refrigeration Directory and Market Data Book will soon be off the press ready to supply you with much needed information on the refrigeration business. The listing of manufacturers' names, addresses and products is being brought up to date. Much new information is being added to the statistical section. Complete specifications on all makes of household and commercial refrigerators will be included. The progress of air conditioning will be covered and the functions of all makes of equipment now on the market will be charted.

To Distributors and Dealers—

Your office will not be completely equipped without a copy of the 1934 DIRECTORY always at hand. It will give you wholesale and retail sales statistics, valuable information on the present distribution structure and data with which you can get an estimate of your local market and compare your present sales operation with the average of others.

It will provide an analysis of the marketing trends in 1933 which will be useful in showing you which way the parade is headed in 1934.

It will also furnish a complete alphabetical listing of all manufacturers; trade name listings; classified listing of all manufacturers of equipment, parts, tools, supplies and materials; complete geographical listing of all sources of supply near you. You will find a multitude of uses for the DIRECTORY.

To Salesmen—

So complete will be the DIRECTORY'S picture of the industry that you will want a copy in your portfolio at all times.

Think of the hundred and one questions constantly coming up. The DIRECTORY will answer them for you—help you to handle individual cases, supply requested information, show what special accessories are available, give you facts and figures you need in your selling.

To Service Men—

As a reference guide, the 1934 DIRECTORY will be invaluable to you. Whenever you run up against special cases in your maintenance and repair work and need some particular part or supply which you do not carry in stock, the DIRECTORY will tell you where you can get it. You will have no trouble in finding the information you want, for the DIRECTORY will be carefully indexed and cross-referenced.

To Engineers, Production Men—

Here is a convenient handbook, 6x9 inches, attractively bound, that will merit an accessible location on your shelf of reference books. Its classified listing of sources of supply alone will be worth much more than its cost. Recall how often you have wanted to know something about the industry right at the moment. Make sure you will have a copy handy by ordering the 1934 DIRECTORY today.

To Sales, Advertising Executives—

The DIRECTORY will be the recognized register of all trade-marked refrigeration products. Whenever you are naming a new product, accessory or device, you will be glad to have the DIRECTORY'S complete listing of trade names to check against. And you will find the statistical section invaluable, too. You will want a copy of this handy book for your personal use. Have one mailed direct to your desk by sending in your order today.

To Suppliers—

In the DIRECTORY you will find your best mailing lists brought right up to date. Think what a great help the Geographical section will be to you. Whenever you send a salesman into a particular city or territory, a time-saving calling list is all prepared for him—including personnel and telephone numbers. There is no question but that you will want a copy of the DIRECTORY. Order it now.

Order Your Copy Now!

The 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK will be ready about March 1. The single copy price is only $3.00.

You can save money now by buying the DIRECTORY in combination with a new or renewal subscription of ELECTRIC REFRIGERATION NEWS at the combination rate of $5.00. The following rates are for United States and countries in the Pan-American Postal Union:

Subscriptions to Electric Refrigeration News (1 Year)	1934 Directory	Combination Rate
One subscription $3.00	$3.00 per copy	$5.00
5 or more subscriptions.. 2.75	2.75 per copy	4.50
10 or more subscriptions.. 2.50	2.50 per copy	4.00
20 or more subscriptions.. 2.25	2.25 per-copy	3.50
50 or more subscriptions.. 2.00	2.00 per copy	3.00

★

BUSINESS NEWS PUBLISHING CO.
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ENGINEERING

Crosley Unit Uses Capillary Tube, Machine Basically Unchanged

(*Concluded from Page 1, Column 5*)

length of capillary tubing is used. The cooling unit is of stamped steel construction, hot galvanized electro-tin plated. A door is provided on evaporators in the three high-priced models.

The cabinet liner is of seamless welded construction, built of 20-gauge enameling steel. It is finished with one ground coat and two finishing coats of white porcelain. The door lining is of the same material and finish. Insulation is Thermocraft, sealed with hydrolene.

The finned tube condenser is cooled by a four-blade fan mounted on the motor shaft. The compressor is driven by a V-belt. The shaft seal is of the diaphragm type with a spring and ball thrust at the other end of the shaft.

Bore and stroke of the compressor are 1½ by 1⅜ in. with one cylinder, reciprocating. The cylinder and crankcase are cast integrally of a special alloy, the designers state, with radiating fins on the cylinder head. The crank-shaft is a counter-balanced eccentric of drop-forged steel. The piston is of cast iron.

Suction gas from the evaporator enters the compressor through the crank-case, while the outlet or high pressure connection is made from the compressor head to the condenser. In the top of the cylinder is a flapper valve which passes high-pressure gas in one direction only into the condenser.

On the down stroke of the piston (see sectional drawing on this page), the "wafer" valve in the piston head opens allowing gas to flow up into the cylinder. On the upward stroke of the piston, this valve closes and gas is compressed and forced through the disc valve into the cylinder head.

Shut-off valves are furnished on both suction and discharge side of the compressor. When the unit is shipped, the refrigerant reposes in the evaporator, and these valves are closed. Before the motor is started to put the unit into operation, these two shut-off valves must be opened by running them back as far as they will go (they are of the back-seating type). About 10 oz. of refrigeration oil is furnished in the crank-case of the compressor at the factory.

Some of the recommendations for service operations on Crosley refrigerators follow:

Testing for Loss of Charge

If part of the sulphur dioxide has been lost through leaks, refrigeration will be inadequate. The level of the liquid refrigerant is indicated by the frost line on the evaporator. If the frost line is below the level of the top of the top ice tray, low charge is indicated.

Other indications of a low charge are:

(a) When the unit is operated, the suction pressure will go to a vacuum (that is, it will "pull down") much more rapidly than normally if the charge is low.

(b) The wattage used by the motor is less than normal if the charge is low.

Probably the most positive indication of a low charge is the frost line on the evaporator.

If the unit lacks a sufficient charge, sulphur dioxide must be added immediately. In order to return oil properly to the compressor, it is necessary to maintain enough liquid refrigerant in the evaporator to float a blanket of oil at the level of the suction inlet opening so that the oil will drain back to the compressor.

When the charge is low, the oil level in the crank-case falls below the reach of the eccentric and its rod, and burned out bearings may result. The low charge causes an "oil logging" of the evaporator and an "oil starving" of the compressor.

If the charge is low, first find and repair all leaks, then add sufficient charge.

Locating Sulphur Dioxide Leaks

To locate sulphur dioxide leaks, make a swab by tying a piece of cloth onto the end of a stick. Saturate this swab with strong (26 per cent) aqua ammonia (not the ordinary household ammonia).

Pass the swab near all connections, seals, and other places where leaks might develop. Leaking sulphur dioxide will be indicated by the formation of a white, smoke-like vapor. If any ammonia solution gets onto the unit, wipe it off at once to avoid corrosion.

Very small leaks may be detected by wiping joints with soap suds or oil and watching the formation of bubbles.

Repairing Leaks

If the leak is at a coupling or connection, tighten the connection, using two wrenches if possible, until the ammonia test indicates that the leak has been overcome.

Back off threaded fittings part way and put white lead or red lead on the threads before tightening. Do not use white lead on flare connections. Threaded fittings may also be removed and tinned to insure tight joints.

Use a new gasket each time a joint is remade on the compressor. After tightening the cap screws, operate the compressor until a high pressure is developed, stop the unit, and again tighten the screws.

If the leak is in a unit such as the condenser or evaporator, carefully find its exact location, mark the spot, and replace the unit with a new one. The old unit may then be returned to the shop for repair by soldering. The condenser must be removed from unit before soldering.

Adding Refrigerant to the System

If the charge is found to be low, sulphur dioxide must be added to the unit. Attach a compound gauge to the sulphur dioxide cylinder by means of a ¼-in. "T" flare connector or to the suction shut-off valve on the compressor. Attach two or three feet of ¼-in. tubing to the SO_2 cylinder.

Open the valve on the SO_2 cylinder very slightly until the odor is noticeable at the end of the tube, indicating that the air has been purged from it. Then close the valve.

Attach the sulphur dioxide line to the suction shut-off valve and open the valve to the outside line, by turning the valve stem a few turns clockwise.

Add the proper amount of sulphur dioxide as follows:

Run the unit, applying hot cloths to the sulphur dioxide cylinder when cylinder is cold to assist the transfer of sulphur dioxide into the unit.

Close off the suction valve from the sulphur dioxide cylinder at intervals when low side gauge shows a pressure and again run the unit. As soon as frost works back on the suction line from the evaporator under such operating conditions, sufficient charge has been added.

When this condition is reached, close the SO_2 cylinder valve, open the suction valve to the SO_2 cylinder line, and purge the line from the SO_2 cylinder to the compressor by heating it.

After purging the cylinder line, close the suction valve to the outside line by turning the valve stem counter clockwise until the valve seats securely. Remove the cylinder and connecting tube.

Open the shut off valve on top of the compressor very slightly and purge sulphur dioxide from the unit until the frost level on the suction line returns to the interior of the cabinet.

Charge Required

Some idea of the amount of charge required under various conditions may be gained from the following data:

(a) The 4½-cu. ft. Crosley refrigerators have a capacity of 30 oz. of sulphur dioxide.

(b) The drums hold 5 lbs. of sulphur dioxide when full.

(c) With 0 back pressure, charge is added to the unit at the rate of about 3 lbs. an hour.

After the charge has been added, attach a pressure gauge to the shut off valves on head of compressor, operate the unit, and check the pressure to see if it is of the proper range as given on the pressure temperature chart. If the pressure is sufficiently high, shut the valve, remove the gauge, and replace the valve cap.

Always check the oil level in the crank-case after a recharged unit has been in operation for several hours. Do not add oil in quantity to a unit which requires charging until after the charge has been added.

Removing Refrigerant from System

Sulphur dioxide is removed from the system only when it is necessary to disconnect the evaporator system, or when too much sulphur dioxide has been added in charging the unit.

Excess charge may be removed in the field. In all cases in which the unit is to be opened up, or the evaporator or other parts disconnected, remove the entire unit to the shop, and perform the operations there, replacing the unit with another one in the meantime.

The gas is removed through the shut off valve on cylinder head valve. It may be put into an empty cylinder, or discharged throug lye water or a bucket of cold fresh water.

To pump the gas into an empty cylinder or drum, the compressor must be in operation. Remove the ⅛-in. pipe plug from the side of the high side shut off valve, and attach a length of ¼-in. tubing. Connect the tubing to an empty cylinder, but do not tighten the coupling.

Open high side shut off valve very slightly (turn to right) until the odor of sulphur dioxide is noticed at the loose coupling. Then tighten the coupling and open the cylinder valve.

Put the cylinder in a bucket of cold water, preferably ice water. Keep the cylinder as cold as possible until the operation is complete. A compound gauge attached to the suction shut off valve will show when the charge has been removed completely.

Start the unit, and operate the compressor until the compound gauge remains at 0, with unit stopped, *keeping the cylinder cool in the meantime.*

When the gauge reads 0, heat cylinder tubing to force gas into the cylinder, and close the cylinder head shut off valve. Heat the line and close valve on sulphur cylinder. Remove the line from the compressor and cylinder.

To Use Lye Water

To discharge the unit through lye water, proceed as above except put the purge line in a bucket of water containing 2 lbs. of water and 2 lbs. of lye. Allow the gas to discharge slowly, starting the compressor only near the end of the discharge period.

Close the discharge valve immediately before stopping the compressor after discharge is completed, so that lye water will not be sucked back into the compressor.

If the compressor is "stuck up," do not attempt to remove charge in the field. Replace the entire unit and take the old one to the shop for disassembly and repair.

Drying Out the System

Before recharging a completely discharged unit, the entire system must be baked out in an oven under approximately 230° F. of heat, until it is thoroughly dry.

The effect of air in the system is to cause an abnormally high head pressure when this is tested.

To remove air from the system, proceed as follows:

(a) Attach a pressure gauge to the high side shut off valve.

(b) Open the valve slightly by turning right with the gauge loosely attached, so that there is some leakage around the gauge coupling.

(c) Run the unit until the pressure gauge, when tightened up, registers the proper pressure for the room temperature.

(d) Close the shut off valve, turn left as far as possible, and remove the gauge.

Liquid in the Condenser

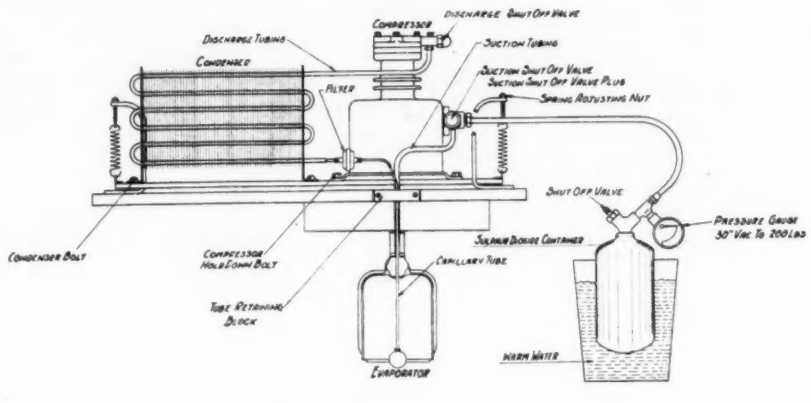
A stoppage in the tubing, especially in the capillary tube, will cause liquid sulphur dioxide to collect in the condenser, resulting in excessive head pressure. This condition may be recognized by the fact that the frost level on the evaporator will be low while at the same time the condenser will be cool.

Start and stop the unit several times to see if the stoppage is temporary in character and may be cleared up. If the condition still remains, a permanent stoppage is indicated.

To remedy this condition, the entire unit must be taken to the shop. Break joint at filter and purge out oil and liquid SO_2 from condenser. If capillary tube bubbles SO_2 gas it is clear and line may be again tightened. Operate unit. If pressure does not built up excessively add "make up" charge.

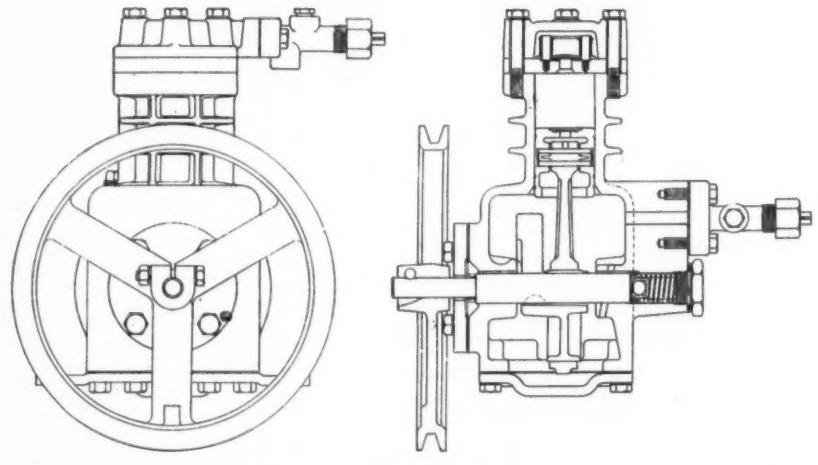
If no bubbles of SO_2 gas appear, the indications are a "plugged" capillary and tube must be removed. Remove the sulphur dioxide from the system. Replace the capillary tube with a new one, and re-charge the unit, after thoroughly baking it out.

How to Charge a System



To add refrigerant, Crosley engineers suggest this hook-up. The supply line is connected to the suction shut-off valve and a slight heat applied to the refrigerant drum as shown.

Crosley Compressor



Compressors used in Crosley electric refrigerators have one cylinder. and are of the conventional type.

Westinghouse Holds Three Service Schools

MANSFIELD, Ohio—Refrigeration service schools in Chicago, Memphis, and East Springfield, Mass., were completed last month by engineers of Westinghouse Electric & Mfg. Co. for distributors and field men in those territories. The instruction was conducted by L. K. Baxter, service manager, and his staff together with representatives of the refrigeration engineering department from East Springfield, Mass.

About half of the schools were devoted to commercial refrigeration, Mr. Baxter states, while remainder was given over to Westinghouse household refrigerators, ranges, washing machines, ironing machines, food mixers, vacuum cleaners, fans, humidifiers, fan-type room heaters, etc.

Assisting with conduct of the school were J. A. Vassar, assistant service manager, and the following district service representatives: Hal Shafer, southeastern; Dan Frain, northwestern; Paul May, southwestern; J. F. Hendrickson, northeastern; S. D. Stockslager, middle Atlantic; and R. H. Gordon, Pacific coast.

Potter Engineer

FERDINAND J. BOMMER
New chief engineer of Potter Refrigerator Corp.

Philadelphia Men Start Service Association

PHILADELPHIA — Under leadership of Harry Klingler, sales manager of the Philadelphia branch of Melchior, Armstrong, Dessau Co., an association of independent service men has been organized here with a membership of approximately 110.

Purpose of the association is to eliminate unfair trade practices, set up standards for proper conduct of the service business, and sponsor lectures and training courses which will increase members' knowledge of refrigeration and improve their work.

Officers, all of them independent service men, are R. H. Keil, president; Raymond Sally, vice president; S. Goodman, secretary; and R. W. Seeds, treasurer. In addition, there has been elected a governing board of five members.

Service Chart for Capillary Tube Units

Effect Of: On	Shortage Of SO_2	Plugged Capillary Tube	Air In System	Over-Charge Of SO_2	Leaky Head OR Piston Valve	Loose Control Bulb	Discharged Control Bulb	Seal Leak
Refrigeration	Poor	None	Normal Unless Head Pressure Is Very High	Poor	Normal Poor If Too Bad	Too Cold	.....	Depends On Head Pressure
Head Pressure	Low	Very High	High	High	Low	.....	.....	High Due To Air
Back Pressure	Low	High	Normal Unless Head Pressure Is Very High	High	High	.....	.....	Depends On Head Pressure
Suction Line	Warm	Warm	Warm	Frosted	Warm	.....	.....	Warm
Vibration	Normal	Bad	Depends On Head Pressure	Depends On Head Pressure	Normal	Normal	.....	Depends On Head Pressure
Temperature of Condenser	Normal	Cool	Hot	Hot	Normal	.....	.....	Hot
Cycle	Probably Continuous	Thermal Relay Kicks Out	Runs Too Long	Runs Too Long	Runs Too Long	Continuous Or Runs Too Long	Will Not Start	Runs Too Long
Wattage	Low	Very High	High	High	Low	Normal	.....	High

Example: The effect of an overcharge of SO_2 on the suction line is a frosted condition of the line.

Text of Commercial Refrigerator Industry Code

Printed on this and the succeeding page is the complete text of the code of fair competition for the commercial refrigerator industry, which became effective Jan. 1.

Article I—Purposes

To effect the policies of Title I of the National Industrial Recovery Act this Code is submitted as a Code of Fair Competition for the Commercial Refrigerator Industry, and upon approval by the President its provisions shall be the standards of fair competition for such industry and shall be binding upon every member thereof.

Article II—Definitions

Section 1. The term "Commercial Refrigerator Industry" or "Industry," as used herein, is defined to include the manufacturing and the installing, and/or repairing (by the manufacturer) of commercial refrigerators, and such branches or subdivisions thereof as may from time to time be included under the provisions of this Code.

Sec. 2. The term "Commercial Refrigerator" as used herein is defined to mean an insulated room, box, chest, cabinet, display case, or counter, when not a part of the fixed construction, for the storage and/or display of perishable food or other products under refrigeration, in meat markets, grocery and delicatessen stores, florists' shops, hotels, restaurants, clubs, institutions, and such other similar establishments where such food or other products are retained or stored in large quantities for purposes of sale or service; provided, however, that this term does not include the refrigerating unit or agent.

Sec. 3. The term "member of the industry" includes but without limitation any individual, partnership, association, corporation, or other form of enterprise engaged in the industry, either as an employer or on his or its own behalf.

Sec. 4. The term "employe" as used herein includes any and all persons engaged in the industry, however compensated, except a member of the industry.

Sec. 5. The term "learner" as used herein is defined to mean and include all beginner employes requiring instruction and/or experience in their duties and/or occupations for a period not to exceed three (3) months.

Sec. 6. The term "trade" as used herein shall mean all channels of distribution of the products.

Sec. 7. The term "Association" as used herein is defined to mean "The Commercial Refrigerator Manufacturers Association."

Sec. 8. The term "South" as used herein shall mean the States of South Carolina, Georgia, Florida, Arkansas, Alabama, Mississippi, Louisiana, Arizona, Oklahoma, Texas, and New Mexico.

Sec. 9. The terms "Act" and "Administrator" as used herein mean, respectively, Title I of the National Industrial Recovery Act and the Administrator for Industrial Recovery.

Article III—Hours

Section 1. *Maximum hours.*—No employe shall be permitted to work in excess of forty (40) hours per week (except that in cases of peak demand employes may work forty-eight (48) hours for eight (8) weeks in any six (6) months period), or nine (9) hours in any twenty-four (24) hour period, or more than five (5) days in any week (seven (7) day period). At least one and one half (1½) times the normal rate shall be paid for hours worked in excess of eight (8) hours in any twenty-four (24) hour period and forty (40) hours in any five (5) day period.

Sec. 2. *Exceptions as to hours.*—The maximum hours otherwise fixed herein shall not apply to employes in emergency maintenance or emergency repair work involving breakdowns or protection of life or property, but in any such special case at least one and one half (1½) times the normal rate shall be paid for hours worked in excess of the maximum hours otherwise herein provided.

Sec. 3. Excepted also shall be travelling salesmen and employes engaged in managerial or executive work who receive more than thirty-five dollars ($35.00) per week (seven (7) day period).

Sec. 4. Excepted also shall be office or clerical employes, who shall not work or be permitted to work in excess of forty (40) hours per week (seven (7) day period), or nine (9) hours in any one twenty-four (24) hour period, or more than five and one half (5½) days in any week.

Sec. 5. Excepted also shall be firemen who shall not be permitted to work more than forty-eight (48) hours per week (seven (7) day period) or more than ten (10) hours in any twenty-four (24) hour period.

Sec. 6. Excepted also shall be watchmen who shall not be permitted to work more than forty-eight (48) hours in any week (seven (7) day period).

Sec. 7. Excepted also shall be truck drivers, installation, repair, and/or erection employes who shall be permitted a tolerance of ten per cent (10%) in any week (seven (7) day period), provided, however, that such employes who work in excess of nine (9) hours in any twenty-four (24) hour period or more than forty-four (44) hours per week shall be paid not less than one and one half (1½) times their normal rate of pay for said excess.

Sec. 8. *Employment by several employers.*—No employer shall knowingly permit any employe to work for any time which, when totaled with that already performed with another employer or employers in this industry, exceeds the maximum permitted herein.

Article IV—Wages

Section 1. *Minimum wages.*—No employe shall be paid in any pay period less than at the rate of forty cents (40¢) per hour except as herein otherwise provided.

Sec. 2. Employes in the South may be paid not less than at the rate of thirty-seven and one half cents (37½¢) per hour. This differential shall be a subject of study and investigation by the Code Authority with a view to its elimination at the earliest time practicable for the industry.

Sec. 3. *Minimum wage for clerical and office employes.*—No clerical or office employe shall be paid in any pay period less than at the rate of fifteen dollars ($15.00) per week.

Sec. 4. *Wages for learners.*—No employe shall be engaged as a learner more than once nor be paid in any pay period less than at the rate of thirty-two cents (32¢) per hour, provided, however, that the total number of all such employes employed by any one member of the industry during any calendar month shall not exceed five percent (5%) of the total number of all employes employed by such employer (exclusive of office and clerical employes).

Sec. 5. *Piecework compensation, minimum wages.*—This article establishes a minimum rate of pay which shall apply, irrespective of whether an employe is actually compensated on a time rate, piecework, or other basis.

Sec. 6. *Evasion through reemployment.*—No employe now employed at a rate in excess of the minimum shall be discharged and reemployed at a lower rate for the purpose of evading the provisions of this Code.

Sec. 7. *Wages above minimum.*—Employers shall not reduce the rates of wages for employes whose rates are now in excess of the minimum rate of wages herein provided (notwithstanding that the number of hours worked in such employment may be hereby decreased), and where in any case an employer has not increased the rates of wages for such employes prior to the effective date of this Code by an equitable readjustment of all wage rates such employer shall adjust all such wages rates. This provision shall be interpreted in the same manner that paragraph 7 of the President's Reemployment Agreement has been interpreted by the Administrator in Interpretations Nos. 1 and 20.

Sec. 8. *Handicapped persons.*—A person whose earning capacity is limited because of age or physical or mental handicap may be employed on light work at a wage below the minimum established by this Code, provided the employer obtains from the State authority designated by the United States Department of Labor a certificate authorizing his employment at such wages and for such hours as shall be stated in the certificate. Each employer shall file with the Code Authority a list of all such persons employed by him.

Sec. 9. *Female employes.*—Female employes performing substantially the same work as male employes shall receive the same rate of pay as male employes.

Article V—General Labor Provisions

Section 1. *Child labor provision.*—No person under sixteen (16) years of age shall be employed in the industry. No person under eighteen (18) years of age shall be employed at operations or occupations which are hazardous in nature or dangerous to health. The Code Authority shall submit to the Administrator before February 1, 1934, a list of such operations or occupations. In any State an employer shall be deemed to have complied with this provision as to age if he shall have on file a certificate or permit duly issued by the Authority in such State empowered to issue employment or age certificates or permits showing that the employe is of the required age.

Sec. 2. *Provisions from the act.*—In compliance with Section 7 (a) of the Act, it is provided:

(a) That employes shall have the right to organize and bargain collectively, through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection.

(b) That no employe and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing, and

(c) That employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment approved or prescribed by the President.

Sec. 3. *Reclassification of employes.*—No employer shall reclassify employes or duties of occupations performed for the purpose of defeating the provisions of the Act or of this Code.

Sec. 4. *Standards for safety and health.*—Every employer shall make reasonable provision for the safety and health of his employes at the place and during the hours of their employment. Standards for safety and health shall be submitted by the Code Authority to the Administrator within six (6) months after the effective date of this Code.

Sec. 5. *State laws.*—No provision in this Code shall supersede any State or Federal law which imposes on employers more stringent requirements as to age of employes, wages, hours of work, or as to safety, health, sanitary or general working conditions, or insurance, or fire protection, than are imposed by this Code.

Sec. 6. *Posting.*—Each employer shall post complete copies of this Code in conspicuous places accessible to employes.

Sec. 7. *Payment of wages.*—Each employer shall make payment of all wages due in lawful currency or by negotiable check therefor, payable on demand. Wages shall be paid at the end of each regular pay period but not to exceed semi-monthly intervals. These wages shall be exempt from any payment for pensions, insurance, or such benefits other than those voluntarily paid by employes. No employer or his agent shall accept, directly or indirectly, any rebate on such wages or give anything of value or extend any favors to any person for the purpose of influencing rates of wages or working conditions of their employes.

The provisions of this section regarding payment of wages at the end of each pay period shall not apply to persons employed in a managerial or executive capacity who earn not less than thirty-five dollars ($35.00) per week, nor to persons employed in clerical or office work. The wages for persons employed in clerical or office work shall be paid at the end of pay periods not to exceed semi-monthly periods.

Article VI—Organization, Powers, And Duties of the Code Authority

Section 1. *Organization and constitution.*—A Code Authority is hereby constituted to cooperate with the Administrator in the administration of this Code.

Sec. 2. The Code Authority shall consist of seven (7) individuals to be selected as follows: Members of the industry shall elect the industry members of the Code Authority by a majority vote of the members of the industry. As many (but not exceeding two (2)) of such industry members of the Code Authority shall be selected from those members of the industry which are not members of the Association as may be eligible to such representation as provided by Section 8 of this Article at the time of election. The complement of the industry members of the Code Authority shall be selected from members of the industry which are members of the Association. Each industry member of the Code Authority shall be a director, officer, or executive of the member of the industry.

Sec. 3. The Association is hereby designated as the agency to conduct an election of the members of the Code Authority within fifteen (15) days after the effective date of this Code, and any other elections of members of the Code Authority which may thereafter be held. Members of the Code Authority shall be elected to serve for a term of one (1) year or until their successors are elected at the next annual meeting of the members of the industry. In the event of any vacancy in the membership of the Code Authority, a special meeting of the members of the industry for an election to fill the incomplete terms of such members shall be called by the Association. Notice of the time and place of each election shall be sent to each member of the industry at his address as registered in accordance with Article XII, at least ten days in advance of such election, and voting at such election may be by person, by proxy, or by letter ballot. Each member of the industry shall have one (1) vote at each election.

Sec. 4. In addition to membership as above provided there may be three (3) members, without vote, to be appointed by the Administrator, to serve for terms of from six (6) months to one (1) year so arranged that the terms do not expire at the same time.

Sec. 5. The representatives who may be appointed by the Administrator, together with the Administrator, shall be given notice of and shall be permitted to sit at all meetings of the Code Authority.

Sec. 6. Each trade or industrial association directly or indirectly participating in the selection or activities of the Code Authority shall (1) impose no inequitable restrictions on membership, and (2) submit to the Administrator true copies of its articles of association, bylaws, regulations, and any amendments when made thereto, together with such other information as to membership, organization, and activities as the Administrator may

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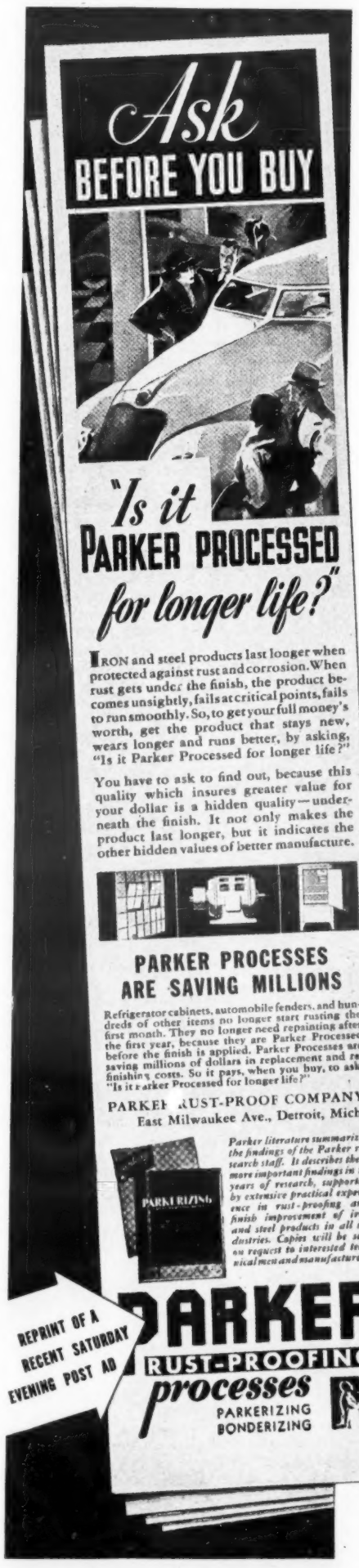
Ask
BEFORE YOU BUY
"Is it
PARKER PROCESSED
for longer life?"
IRON and steel products last longer when protected against rust and corrosion. When rust gets under the finish, the product becomes unsightly, fails at critical points, fails to run smoothly. So, to get your full money's worth, get the product that stays new, wears longer and runs better, by asking, "Is it Parker Processed for longer life?"
You have to ask to find out, because this quality which insures greater value for your dollar is a hidden quality—underneath the finish. It not only makes the product last longer, but it indicates the other hidden values of better manufacture.
PARKER PROCESSES ARE SAVING MILLIONS
Refrigerator cabinets, automobile fenders, and hundreds of other items no longer start rusting the first month. They no longer need repainting after the first year, because they are Parker Processed before the finish is applied. Parker Processes are saving millions of dollars in replacement and refinishing costs. So it pays, when you buy, to ask, "Is it Parker Processed for longer life?"
PARKER RUST-PROOF COMPANY
East Milwaukee Ave., Detroit, Mich.
Parker literature summarizes the findings of the Parker research staff. It describes their more important findings in 17 years of research, supported by extensive practical experience in rust-proofing and finish improvement of iron and steel products in all industries. Copies will be sent on request to interested technical men and manufacturers.
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REPRINT OF A RECENT SATURDAY EVENING POST AD
PARKER
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processes
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HOW DO YOU ANSWER THIS QUESTION?

EACH year, more people are asking, "Is it Parker Processed for longer life?" Each year, more people are learning that "Parker Processed" really means protection from rust, better finish, more durable iron and steel products. Extensive use of these processes on such widely distributed products as automobiles, refrigerators, typewriters, beer barrels, electrical equipment and similar iron and steel products is spreading the knowledge.

Parker Processes are now used on a considerable percentage of refrigerator production. If your line carries this sales advantage, make sure it is stressed in the sales demonstration.

In no other way can so much product improvement be added at so little cost.

Write for literature today!

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2197 East Milwaukee Avenue
DETROIT, MICHIGAN

PARKER
RUST-PROOFING
processes

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Text of Commercial Case Industry Code

(*Concluded from Page 9, Column 5*)

deem necessary to effectuate the purposes of the Act.

Sec. 7. In order that the Code Authority shall at all times be truly representative of the industry and in other respects comply with the provisions of the Act, the Administrator may prescribe such hearings as he may deem proper; and thereafter if he shall find that the Code Authority is not truly representative or does not in other respects comply with the provisions of the Act, may require an appropriate modification in the method of selection of the Code Authority.

Sec. 8. Members of the industry shall be entitled to participate in and share the benefits of the activities of the Code Authority and to participate in the selection of the members thereof by assenting to and complying with the requirements of this Code and sustaining their reasonable share of the expenses of its administration. Such reasonable share of the expenses of administration shall be determined by the Code Authority, subject to review by the Administrator, on the basis of volume of business and/or such other factors as may be deemed equitable.

Sec. 9. Nothing contained in this Code shall constitute the members of the Code Authority partners for any purpose. Nor shall any member of the Code Authority be liable in any manner to anyone for any act of any other member, officer, agent, or employe of the Code Authority. Nor shall any member of the Code Authority, exercising reasonable diligence in the conduct of his duties hereunder, be liable to any one for any action or omission to act under this Code, except for his own wilful misfeasance or nonfeasance.

Sec. 10. *Powers and Duties.*—The Code Authority shall have the following further powers and duties, which shall be subject to the right of the Administrator, on review, to disapprove:

(a) To insure the execution of the provisions of this Code and provide for the compliance of the industry with the provisions of the Act.

(b) To adopt by-laws and rules and regulations for its procedure and for the administration and enforcement of the Code.

(c) To obtain from members of the industry such information and reports as are required for the administration of the Code and to provide for submission by members of such information and reports as the Administrator may deem necessary for the purposes recited in Section 3 (a) of the Act, which information and reports shall be submitted by members to such administrative and/or government agencies as the Administrator may designate; provided that nothing in this Code shall relieve any member of the industry of any existing obligations to furnish reports to any government agency. No individual reports shall be disclosed to any other member of the industry or any other party except to such governmental agencies as may be directed by the Administrator.

(d) To use such trade associations and other agencies as it deems proper for the carrying out of any of its activities provided for herein, provided that nothing herein shall relieve the Code Authority of its duties or responsibilities under this Code and that such trade associations and agencies shall at all times be subject to and comply with the provisions hereof.

(e) To make recommendations to the Administrator for the coordination of the administration of this Code with such other codes, if any, as may be related to the industry.

(f) To secure from members of the industry an equitable and proportionate payment of the reasonable expenses of maintaining the Code Authority and its activities.

(g) To cooperate with the Administrator in regulating the use of any N.R.A. insignia solely by those members of the industry who have assented to and are complying with this Code.

(h) To recommend to the Administrator further fair trade practice provisions to govern members of the industry in their relations with each other or with other industries, and to recommend to the Administrator measures for industrial planning, including stabilization of employment.

Article VII—Trade Practice Rules
General Definition

For all purposes of the Code the acts described in this Article shall constitute unfair practices. Any member of the industry who shall directly, or indirectly through any officer, employe, agent, or representative, knowingly use, employ, or permit to be employed, any of such unfair practices shall be guilty of a violation of the Code.

Rule 1. Inaccurate Reference to Competitors, etc.—No member of the industry shall publish advertising which refers inaccurately in any material particular to any competitors or their goods, prices, values, credit terms, policies, or services.

Rule 2. Inaccurate Advertising.—No member of the industry shall publish (whether printed, radio, display, or of any other nature), which is misleading or inaccurate in any material particular, nor shall any member in any way misrepresent any goods (including but without limitation its use, trade-mark, grade, quality, quantity, origin, size, substance, character, nature, finish, material, content, or preparation) or credit terms, values, policies, services, or the nature or form of the business conducted.

Rule 3. Commercial Bribery.—No member of the industry shall give, permit to be given, or directly offer to give, anything of value for the purpose of influencing or rewarding the action of any employe, agent, or representative of another in relation to the business of the employer of such employe, the principal of such agent, or the represented party, without the knowledge of such employer, principal or party. Commercial bribery provisions shall not be construed to prohibit free and general distribution of articles commonly used for advertising except so far as such articles are actually used for commercial bribery as hereinabove defined.

Rule 4. Interference with Another's Contracts.—No member of the industry shall induce or attempt to induce the breach of an existing contract between a competitor and his employe or customer or source of supply; nor shall any such member interfere with or obstruct the performance of such contractual duties or services.

Rule 5. Secret Rebates.—No member of the industry shall offer or make any secret or discriminatory payment or allowance of a rebate, refund, commission, credit, unearned discount or excess allowance, whether in the form of money or otherwise, nor shall a member of the industry offer or extend to any customer any secret or discriminatory service or privilege for the purpose of influencing a sale.

Rule 6. Giving Prizes, Premiums, or Gifts.—No member of the industry shall offer or give prizes, premiums, or gifts in connection with the sale of products, or as an inducement thereto, by any scheme which involves lottery, misrepresentation, or fraud.

Rule 7. Defamation.—No member of the industry shall defame competitors by falsely imputing to them dishonorable conduct, inability to perform contracts, questionable credit standing, or by other false representations or by the false disparagement of the grade or quality of their goods.

Rule 8. Threats of Lawsuits.—No member of the industry shall publish or circulate unjustified or unwarranted threats of legal proceedings which tend to or have the effect of harassing competitors or intimidating their customers. Failure to prosecute in due course shall be evidence that any such threat is unwarranted or unjustified.

Rule 9. Espionage of Competitors.—No member of the industry shall secure or attempt to secure confidential information concerning the business of a competitor by a false or misleading statement or representation or by false impersonation of one in authority by bribery or any other unfair method.

Rule 10. Selling Below Cost.—No member of the industry shall sell below his allowable cost. Pursuant to the provisions of Article VI, the Code Authority shall formulate or cause to be formulated standard methods or systems of cost accounting for use in this industry, which methods or systems shall be adaptable to the cost-accounting procedure of and to the business of this industry. Such methods or systems shall specify the factors that shall determine the allowable cost for each member of the industry pursuant to the provisions of this section. Upon approval of such methods or systems by the Administrator the Code Authority shall furnish to each member of the industry complete details of such methods or systems. Thereafter in determining costs each member of the industry shall use a cost-accounting system which shall be at least as complete and detailed as the cost-accounting method or system recommended by the Code Authority and approved by the Administrator.

The cost of a used refrigerator or other product of this industry for which a trade-in allowance has been made by the seller of new equipment to replace that taken in exchange shall be not less than the amount of the allowance shown on the purchase contract for such new equipment. This provision does not apply to the sale of obsolete or damaged products, which products may be sold only at such prices and under such terms and conditions of sale as shall be established by the Code Authority.

Rule 11.—No member of the industry shall, directly or indirectly, discriminate in price between different purchasers of the products of this industry; provided, however, that nothing contained in this section shall prevent discrimination in price between purchasers of the same class on account of differences in the trade, quality, or quantity of the product sold, or which makes only due allowance for difference in the cost of selling or transportation.

Rule 12.—No member of the industry shall resell refrigerating units, accessories, equipment, or other products of other industries, without the addition to the invoice cost of all other elements of cost as determined in accordance with Rule No. 10 of this Article.

Rule 13.—No member of the industry shall sell any commercial refrigerator or other product of this industry of special design or size at less than the estimated cost of such pursuant to Rule 10 of this Article.

Rule 14.—No member of the industry shall, directly or indirectly, permit or allow his employes, agents, or representatives to lend money or anything of value to any purchaser for the purpose or with the effect of financing or assisting to finance any contract for the purchase of the products of this industry.

Rule 15.—No member of the industry shall postdate or predate any contract, invoice, quotation or receipt, or withhold from or insert in any contract, invoice, quotation, or receipt any statement which makes such contract, invoice, quotation, or receipt a false statement either in whole or in part.

Rule 16.—Nothing in this Code shall limit the effect of any adjudication by the Courts or holding by the Federal Trade Commission on complaint, finding, and order, that any practice or method is unfair; provided, that such adjudication or holding is not inconsistent with any provision of the Act or of this Code.

Article VIII—Publicity of Prices, Terms, and Conditions of Sale

Section 1. Within ten (10) days after the effective date of this Code each member of the industry shall file and shall maintain on file with the Code Authority, or with such agency as the Code Authority may designate, such member's current and most recently published catalog and specifications and a full and complete price list with discounts applicable thereto for all his standard products. Such price lists shall be based on the net retail selling price f.o.b. manufacturing point and include all discounts, terms, and conditions of sale to the consumer trade, provided, however, that no such price list and/or discount applicable thereto shall provide for prices less than the member's individual cost as determined by Rule 10 of Article VII. A schedule of all such specifications, price lists, discounts, and terms and conditions of sale shall be immediately distributed by the Code Authority to all interested members of the industry.

Sec. 2. In the event of any change by any member of the Industry in any price, discount, specification, term, or condition of sale, he shall file full and complete copies of every such change with the Code Authority ten (10) days in advance of the effective date of any such change. Copies thereof, with notice of the effective date of such change, shall be immediately published and distributed by the Code Authority to the interested members of the Industry who may file, if they so desire, revisions of their prices, discounts, specifications, terms, or conditions of sale, which, if filed not less than five (5) days prior to such effective date, shall be effective on the same such effective date.

Sec. 3. Such catalogs, specifications, price lists, discounts, and terms and conditions of sale together with any changes thereto shall be open to inspection at all reasonable times by any interested party.

Sec. 4. No member of the Industry shall sell, pay a rebate, or allow a deduction at any time to any person except in accordance with his prices, discounts, terms, and conditions of sale filed in the manner described hereinabove. Each member of the Industry shall have the right, individually, to file new prices, discounts, terms, and conditions of sale, from time to time, as herein provided.

Sec. 5. No member of the industry shall render any service other than advice and consultation to any purchaser of any product of the industry in connection with the sale, installation or repair of any product unless not less than the cost of such services to the member shall be charged such purchaser.

Sec. 6. The following rules shall be observed in the making of contracts by the members of this industry. Action of the Code Authority under this section shall be subject to the right of the Administrator to approve or disapprove.

(a) Charges for time payments extending more than three (3) months shall in no event be more liberal than those established by the Code Authority.

(b) The allowance value of any trade-in together with a detailed description of such shall be clearly stated in the sales contract for which such trade-in is received as a part payment.

(c) Trade-ins shall not be accepted in lieu of cash down or arrival payments.

(d) Down payments shall be based on the net delivered price, after deduction of credit for any trade-in made.

(e) Down payments, arrival payments, monthly payments or other periodic payments shall represent only payments in cash made or to be made by the purchaser.

(f) Payments in kind shall not be accepted in lieu of cash.

(g) The last payment in any series of payments shall not be substantially larger than any other payment in the same series.

(h) The first monthly instalment payment shall be due and payable not more than forty-five (45) days from the date of shipment.

(i) Each contract for the sale of products of this industry shall include complete and exact specifications of the product and the equipment to be furnished; provided, however, that if a standard new product of a member of the industry is to be furnished, reference shall be made to the member's standard model number, specifications of which are on file with the Code Authority pursuant to Section 1 hereof. Any deviation from the specifications of standard products shall be clearly set forth on a specification form to be approved by the Code Authority which shall be attached to and made a part of the sales contract.

Sec. 7. No member of the Industry shall provide more favorable time and terms of payment for instalment sales than:

(a) Cash amounting to at least ten per cent (10%) of the net sales price to accompany the order.

(b) Cash amounting to at least twenty per cent (20%) of the net sales price to be paid prior to delivery to the purchaser.

(c) Balance due on any contract for sale to be paid in not more than twenty-four (24) months from the date of such contract.

(d) Each monthly instalment shall amount to not less than fifteen dollars ($15.00), except on sales of used equipment not exceeding three hundred dollars ($200.00) in value.

Article IX—Modification

Section 1. This Code and all the provisions thereof are expressly made subject to the right of the President, in accordance with the provisions of sub-section (b) of Section 10 of the Act, from time to time to cancel or modify any order, approval, license, rule, or regulation issued under said Act.

Sec. 2. This Code, except as to provisions required by the Act, may be modified on the basis of experience or changes in circumstances, such modifications to be based upon application to the Administrator and such notice and hearing as he shall specify, and to become effective on approval of the President.

Article X—Monopolies, etc.

No provision of this Code shall be so applied as to permit monopolies or monopolistic practices, or to eliminate, oppress, or discriminate against small enterprises.

Article XI—Price Increases

Whereas the policy of the Act to increase real purchasing power will be made more difficult of consummation if prices of goods and services increase as rapidly as wages, it is recognized that price increases, except such as may be required to meet individual cost, should be delayed, but when made, such increases should, so far as possible, be limited to actual additional increases in the seller's cost.

Article XII—Registration of Members Of the Industry

Each member of the Industry shall within thirty (30) days of the effective date of this Code register with the Code Authority. All members of the Industry who may engage in the Industry thereafter shall likewise register with the Code Authority. Registration of a member of the Industry shall include the full name and mailing address of the member. The time limit for the registration by any member of the Industry may be extended whenever, in the opinion of the Administrator, the time limit as provided herein might cause an injustice to any member of the Industry.

Article XIII—Reports

In addition to information required to be submitted to the Code Authority, all or any of the persons subject to this Code shall furnish such statistical information as the Administrator may deem necessary for the purposes recited in section 3 (a) of the Act to such Federal and State Agencies as the Administrator may designate; and nothing in this Code shall relieve any person of any existing obligation to furnish reports to Government agencies.

Article XIV—Effective Date

This Code shall become effective on the second Monday after its approval by the President.

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PEERLESS ICE MACHINE CO., 515 W. 35th St., CHICAGO. Ill.

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● There is a Dayton V-Belt for all makes and types of refrigerators. A stock is available near you. Send for price list and name of your nearest distributor.

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Forty-eight hour service on repairs. Immediate shipment on replacements. Complete stock. All repairs and parts guaranteed to be free from defects in workmanship and material for one year.

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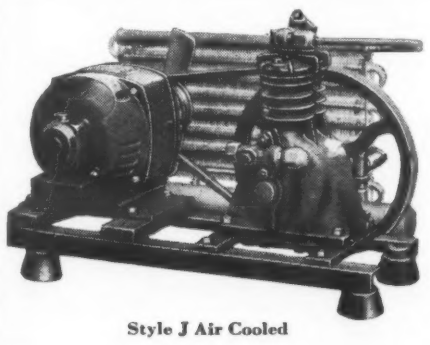

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PATENTS

Issued Dec. 26, 1933

1,940,680. REFRIGERATING APPARATUS. Bertram B. Geyer, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application July 17, 1930, Serial No. 468,604. Renewed May 15, 1933. 21 Claims. (Cl. 62—108 5.)

1. In freezing apparatus for liquids, the combination of a tray for making ice cubes, a grid within said tray adapted to form a plurality of ice cube molds, and cam means for expanding said grid and for raising the grid from the tray.

1,940,717. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corp., a corporation of Delaware. Application Nov. 20, 1926. Serial No. 149,761. Renewed March 1, 1933. 8 Claims. (Cl. 62—99.)

4. A cooling unit for a refrigerating apparatus adapted to be placed in the path of medium to be cooled thereby, said cooling unit comprising heat exchange means in intimate contact with a refrigerant and with said medium to be cooled, said heat exchange means including a portion constructed and arranged to provide a freezing zone, and other contiguously arranged portions forming refrigerant conveying duct means and being spaced from the portion providing the freezing zone to provide a substantially solid wall of heat exchange material for shielding the freezing zone from the action of the circulating medium.

1,940,734. REFRIGERATING SYSTEM. Bennet Carroll Shipman, San Mateo, Calif. Application June 15, 1929. Serial No. 371,149. 11 Claims. (Cl. 62—126.)

1. That improvement in the art of refrigeration applied to a plurality of evaporators at different temperatures which consists first in separating gas from liquid, if any, in the fluid issuing from said evaporators and then reducing the pressure of such gas from the various evaporators correspondingly to the temperatures desired therein, and thereafter transferring the negative heat of the said gas of each evaporator to the refrigerant liquid incoming to the same evaporator.

1,940,741. APPARATUS FOR COOLING LIQUIDS. Richard H. Brewer, Warren, Ohio, assignor to The Halsey W. Taylor Co., Warren, Ohio, a corporation of Ohio. Application May 18, 1931. Serial No. 538,117. 3 Claims. (Cl. 62—141.)

1. In a cooling device, a tank having an opening at one end, a cylinder situated within said tank, means secured to the tank and to the cylinder for supporting the latter, a cover member for closing said opening, a cooling unit carried by said cover and situated within said cylinder and means for detachably connecting the cover member to said supporting means.

1,940,787. SYSTEM OR APPARATUS FOR HUMIDIFYING AIR. Sewell Munson Corbett, Fort Bragg, N. C. Application April 18, 1929. Serial No. 356,197. 3 Claims. (Cl. 237—78.) (Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757.)

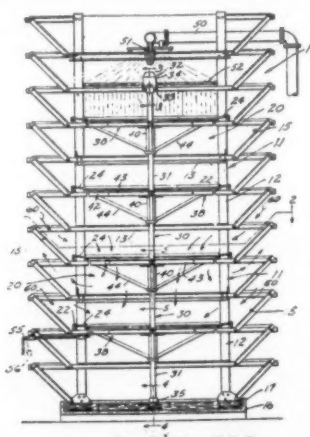
1. The combination, with a fluid-containing radiator, of a vaporizer, located in proximity to said radiator, a conduit leading to said vaporizer, a thermostat in said radiator whereby it is exposed to the temperature of the fluid circulating therethrough, a valve in said conduit, and an operative connection between the said valve and the said thermostat.

1,940,963. CONDENSER. Patrick Joseph McIntyre, Detroit, Mich. Application Jan. 12, 1931. Serial No. 508,080. 8 Claims. (Cl. 257—255.)

1. A cooling fin unit adapted to be associated with a plurality of spaced apart alined tubes comprising a strip apertured at spaced apart intervals along its length, and notches cut into the edge of said strip intermediate each pair of apertures.

1,941,000. COOLING TOWER. Norman O. Fleming, La Crescenta, Calif. Application Nov. 28, 1927, Serial No. 236,173. Renewed March 27, 1933. 18 Claims. (Cl. 261—111.)

1. A cooling tower comprising: a frame open to the atmosphere; means for confining a liquid falling in a subdivided



1,941,000

state through the atmosphere in the space defined by said frame; and means movable by the impact of said liquid thereagainst for accelerating the action of the atmosphere upon said liquid.

1,941,198. ICE MAKING APPARATUS. Alvin H. Baer, Carbondale, Pa., assignor to The Carbondale Machine Co., Carbondale, Pa., a corporation of Pennsylvania. Application Feb. 23, 1933. Serial No. 657,931. 9 Claims. (Cl. 62—159.)

1,941,397. TERMINAL FOR REFRIGERATING APPARATUS. John A. Grier, New York, N. Y., assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 7, 1930. Serial No. 473,594. 3 Claims. (Cl. 173—311.)

1. An electrical terminal adapted to conduct electrical energy through a wall of a container comprising in combination, a container, a metallic member extending through an opening in a wall of said container, means surrounding said metallic member on each side of the container wall and adapted to engage said wall, a flexible insulating bushing surrounding a portion of said metallic member and adapted to engage the wall of the opening in said container, said bushing being disposed between said means and normally preventing engagement of said means with said container wall, means for clamping said first named means against said bushing to compress said bushing against said metallic member and the wall of the opening in said container to provide a hermetic seal around said metallic member, and said last named means simultaneously clamping said first named means tightly against the wall of said container to substantially seal said bushing from atmosphere on both sides of said container wall.

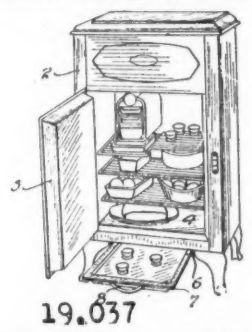
1,941,425. AIR CONDITIONING DEVICE. August Young, Flushing, N. Y. Application Aug. 5, 1932. Serial No. 627,643. 12 Claims. (Cl. 257—8.)

1. An apparatus for conditioning the air in a room including means extending around the walls of the room, said means defining continuous independent ducts for receiving and conveying away the foul air and for receiving and discharging fresh air into the room and a conduit extending throughout the latter duct for affecting the temperature of the fresh air supplied to the room from said latter duct.

REISSUE

19,037. REFRIGERATOR CABINET. Frank R. West, Detroit, Mich., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania, Original No. 1,932,003, dated October 24, 1933, Serial No. 671,444, May 17, 1933. Application for reissue Oct. 25, 1933. Serial No. 695,192. 12 Claims. (Cl. 62—89.)

1. In a refrigerator cabinet of the type having a food compartment and a door for normally closing the entrance to said



19,037

food compartment, a combined shallow transfer shelf and tray slidably carried by the cabinet and movable when in use to a position at the front of and adjacent the bottom of the food compartment whereby when the door is opened the refrigerated air from the food compartment will be forced across the surface of the transfer shelf and tray.

Gibson Has 3 Cabinet Styles in 1934 Line

(Concluded from Page 1, Column 2)

son "MonoUnit" compressor introduced last year.

Such convenience features as the sliding shelf, dome light, removable shelf to provide bottle space, and butter and egg tray are again included in the Gibson models.

Model LR-494 has 4.5 cu. ft. of net storage space and 7.41 sq. ft. of shelf area. Three single depth trays make 63 ice cubes at one freezing. Model LR-504 has 4.72 cu. ft. of net food storage capacity and 8.08 sq. ft. of shelf area. One single and one double depth tray make 63 ice cubes at one freezing. These two models are available in lacquer exterior finish only.

Model LR-574 has a net food storage capacity of 5.51 cu. ft. and a shelf area of 9.33 cu. ft. A total of 63 ice cubes are made at one freezing with one single and one double depth tray. Exterior finish available in either lacquer or porcelain.

With three single and one double depth tray, model LR-774 makes 98 ice cubes at one freezing. Net storage space is 7.36 cu. ft. and shelf area is 13.1 sq. ft. Can be had in either lacquer or porcelain exterior finish.

Model LR-634 has 6.05 cu. ft. of net storage space and 11.62 sq. ft. of shelf area. It makes 77 ice cubes in two single and one double depth tray at one freezing. Available with either porcelain or lacquer exterior.

Only two-door model in the line is the L2-864. This model has 8 cu. ft. of net food storage space and 14.103 sq. ft. of shelf area. With three single and one double depth tray it makes 98 ice cubes at one freezing. It is available with either lacquer or porcelain.

Potter Vice President Starts European Trip

BUFFALO — Edward A. Carlson, vice president of Potter Refrigerator Corp., is to start today (Jan. 10) on an extended trip to European cities and industrial centers.

While abroad, Mr. Carlson will study the export market for American-made refrigerators and air-conditioning equipment, as well as the development of the mechanical refrigeration industry in Europe.

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Westinghouse Develops Self-Contained Cooler

(Concluded from Page 1, Column 2)

pipes carry the refrigerant fluid from one to the other.

Because all the equipment is in one cabinet in the new Westinghouse air conditioner, no lengthy refrigerant pipes are required, and no basement or closet space is needed, greatly simplifying the operation of installing the air conditioner. Flexible tubes supply cooling water and carry off the condensation.

Three functions of weathermaking are performed by the new Westinghouse unit, namely: cooling the air, removing its excess moisture or humidity, and gently circulating it throughout the room. The new room cooler is intended for hotel rooms, offices, small stores, and homes.

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